

WEIRD Swarm Management

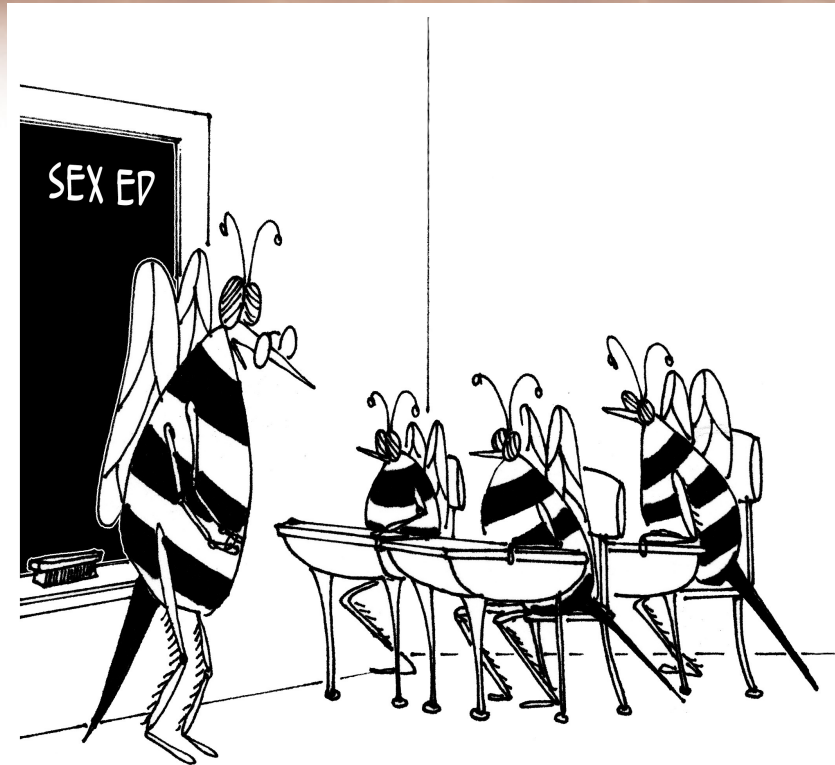
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Getting your bees to not swarm is like telling your teenagers not to have sex.



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"IF YOUR PARENTS WANT YOU EXCUSED FROM TOMORROW'S FILM ON POLLINATION, YOU'LL NEED A NOTE FROM HOME."



Swarming is Reproduction at a Colony Level



- You can stand on your head and spit wooden nickels but some of your hives are still going to swarm (after they all stop laughing at you!)



But Swarms can be a Problem



...especially in urban and suburban areas

Why do the bees do this?





Factors that Trigger Swarming

1. Plentiful resources to support rapid population growth.
2. Increasing colony size (both numbers of workers and comb area).
3. Congestion of the brood nest.
4. Skewing of worker age distribution toward younger individuals. (Swarms have more younger bees than older.)
5. Decreased concentration or transmission of QMP (Queen Mandibular Pheromone) and other queen pheromones.



You could just tell them to:



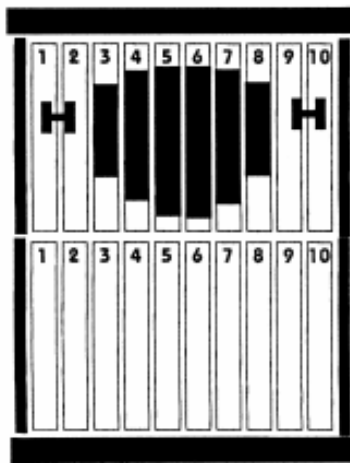


What's a beekeeper to do
who wants to actually
keep their bees?

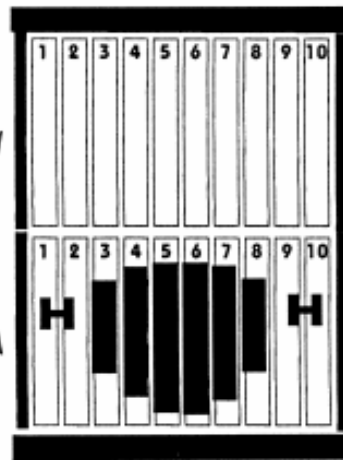


Let's look at some "normal" swarm control techniques first...

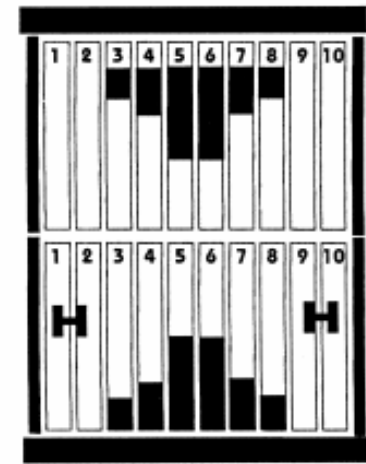
- Reversing brood boxes in early spring: double deep system



Before reversing



Correct reversing

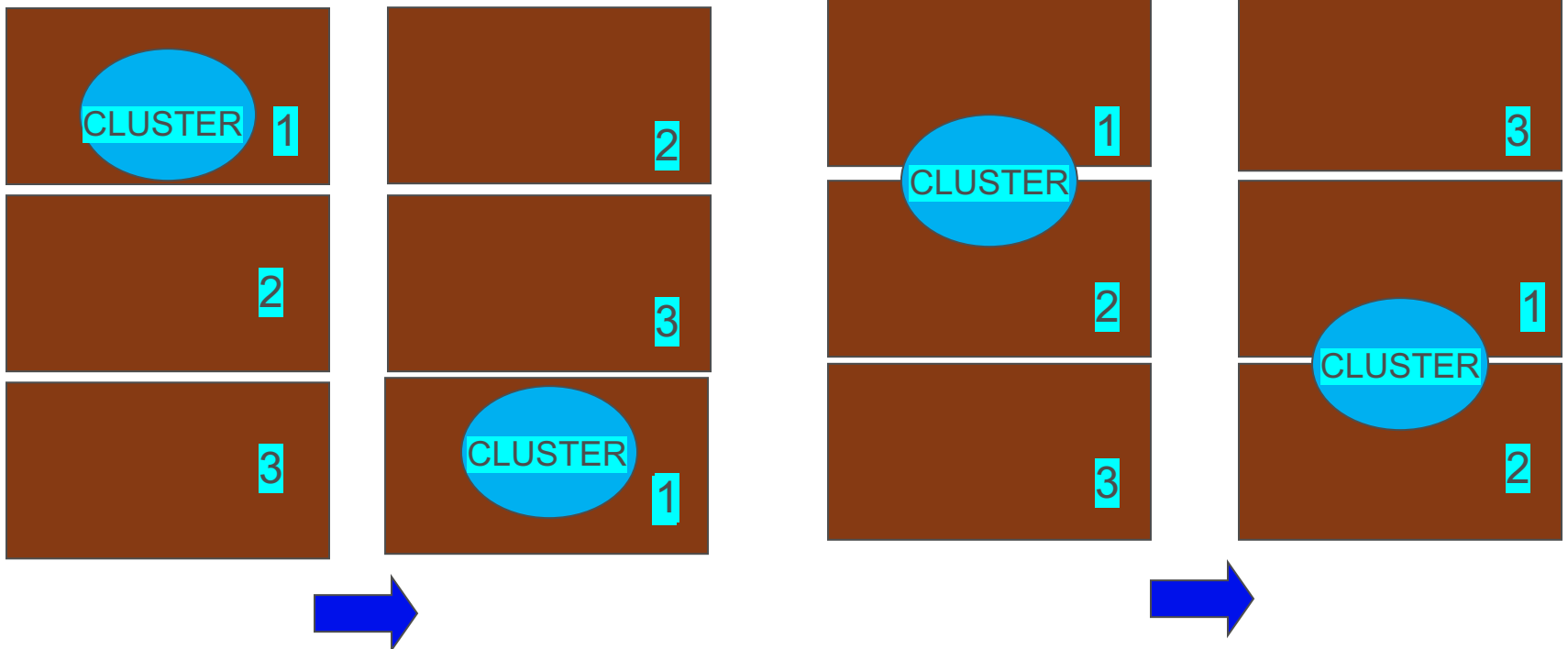


Incorrect reversing



Reversing, cont'd

- Reversing brood boxes, triple medium system:





A really big colony, with bees in all the boxes, may have very little empty comb to use in reversing. In this case, you may need to put the brood nest as low as possible and give them a whole box of empty drawn comb above the brood nest.



What does “reversing” do?

- It provides empty drawn comb *above* the cluster. Because bees don't perceive space below them as available space, this leads to a *perception* of more brood comb area.
- It does NOT reduce worker numbers, increase queen pheromone transmission, or change the ages of the bees in the colony. It just gives the queen more space to lay.





Adding Honey Supers

- If there isn't enough room for nectar storage, the bees may plug the brood nest with nectar. That congestion can also trigger swarming.
- But **ONLY** adding honey supers is not enough. Brood comb for egg laying is critical.





Making Splits

- Splitting a colony addresses more of the swarm triggers than reversing. It:
 - Reduces the colony population.
 - Increases comb area if you give each part of the split another box with **drawn** comb. (Queens cannot lay in foundation so giving foundation is not the same.)
 - Increases QMP transmission since you've reduced worker numbers.



Some Types of Splits

- **Walk-away Split:** Equal or not, you let the queenless part raise its own queen.
- **Taranov Split:** More on this one in a sec.
- **Mississippi Split:** Richard Adee's splitting of two double deeps into four equal nucs.
- **Cut-down Split:** Similar to Padgening.
- **Fly-back Split:** Split where foragers all fly back to the original location
- **Even Split:** Resources (brood, bees, food) are divided up equally. Queenless half gets a new queen.



This might be a bit confusing...





Taranov Split – Merits A Second Glance





The Taranov Split

(G. F. Taranov, 1947)



(There's a bit more to it, but this is the basic idea.)

Like many more sophisticated techniques, the Taranov Split separates the foragers from the nurse bees but it leaves the queen with the nurse bees.

- Make a ramp with a 4" gap between the end of the ramp and the bottom board.
- Shake all the bees out onto the ramp.
- Foragers fly over the gap.
- Nurse bees and queen stay behind and cluster under the ramp.
- You give the "swarm" new digs.



Splits

A nuc, of course, is a type of split – one that is uneven.



Remember that if you only remove a nuc rather than doing a 50-50 split, you may not reduce the trigger factors enough to prevent swarming,
Splits can work, BUT.....



YOU JUST
LOST AT
LEAST SOME
OF
YOUR HONEY
CROP.



Larger colonies make more honey.

- It's not a linear relationship between number of workers and volume of nectar collected.
- A colony of 60,000 bees will make **more than twice** the amount of honey as a colony of 30,000 bees. Sometimes a LOT more.
- When you split your bees, unless you manage them to compensate, you will lose some of the honey they would have made had you **not** split them and they didn't swarm!



How can we keep the bees at home and still maximize honey production?





WEIRD Swarm Control Techniques

- Beekeepers are a pretty creative bunch and some of us have come up with some WEIRD ideas for swarm control.
- Most of these are labor intensive.
- Many are pretty invasive, involving looking at every frame, sometimes twice.
- Often not practical for someone with a lot of hives, they can be fun and effective for an ambitious hobbyist.



Let's take a look at:

- The Demaree technique
- The Snelgrove method
- Padgening
- Shook swarming
- There's probably plenty of others, but these are the most common WEIRD techniques.

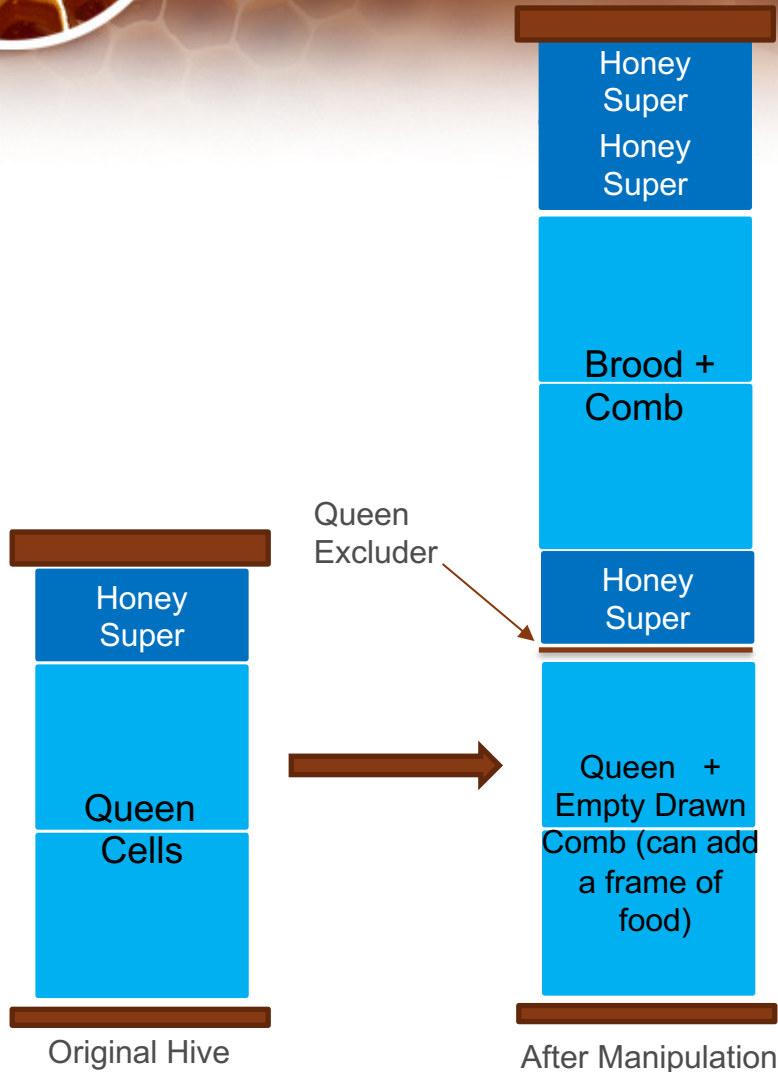


The Demaree Technique

- Invented by George Demaree and published in ABJ in 1884.
- Can be done on colonies with ripe queen cells.
- Intense manipulation stops swarming and produces a large honey crop.
- Requires additional equipment in an amount equal to what you start out with.



The Demaree Technique



1. Find queen. Remove to a safe spot.
2. Destroy all queen cells.
3. Transfer all frames containing brood in any stage (eggs, larvae, pupae) to another brood box or boxes.
4. Replace the brood frames you removed with empty drawn comb. Add the queen, a queen excluder, and any honey supers.
5. Put boxes with brood and enough additional frames to fill the boxes above the honey supers.
6. 7-8 days later, return and destroy any queen cells present above the excluder. Brood is now too old to make new queen cells.



The Demaree Technique: What does it do?

- It's NOT a split. All the bees stay home.
- It separates the queen from the young bees, which will stay "upstairs" caring for the brood. The foragers will return to the lower two boxes.
- It gives the queen a huge amount of empty drawn comb in which to lay.
- As the brood emerges, the "upstairs" bees will fill the comb with honey: both brood comb and any honey supers you add.
- Demareeing should be done during a strong nectar flow. You will get a LOT of honey!



The Snelgrove Board Method

- Invented by Leonard Snelgrove in 1934.
- Uses a device called a Snelgrove board or double screen.
- Creates a *vertical split*.
- Can be used to raise a new queen or create one or more nucs.
- After the initial manipulations, this method is less labor intensive than many others.
- Relies on keeping the *older bees with the queen*.



Snelgrove Board Method



- Recall that the queen leaves with a preponderance of younger bees. Why?
- Young bees with active food and wax glands are needed to build the new nest and to feed the brood the queen will lay.
- Keeping the queen separated from the young bees can discourage swarming.



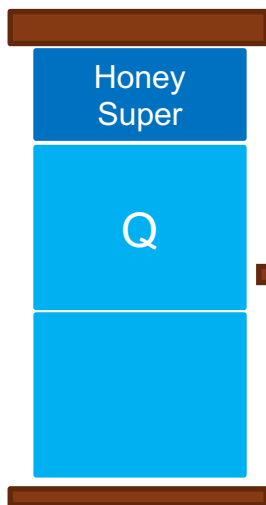
Snelgrove Board Method

- The Snelgrove Board method is mostly used as a pre-emptive method to prevent swarm preparations from starting, not to stop it once queen cells have already been started.
- There are several ways to use the Snelgrove board.
- The method gets more complicated and labor intensive if used after queen cells have been started. We'll discuss the method used before queen cells have been started.

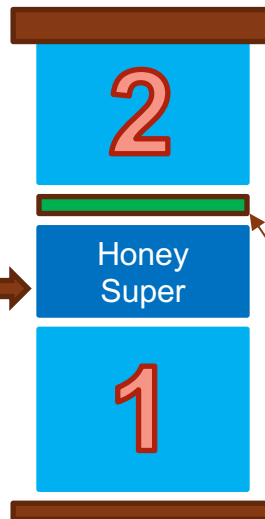


The Snelgrove Board Method

Strong colony
before swarm
preparations
have started
(no queen cells)



Colony after
manipulation



1

Contains:

- The queen and the frame you found her on.
- One frame of mostly capped brood
- The rest is drawn, empty comb.

2

Contains:

- 2-3 frames of nectar, pollen, honey
- Brood in all stages, including eggs and very young larvae.
- All the nurse bees on the frames

Snelgrove Board, top door in back open to start



The Snelgrove Board Method, Step by Step

- Set any supers to the side.
- Locate the queen and put her in a safe spot.
- Put an empty box on the bottom board and to it add: a frame of capped brood, the frame with the queen, a frame of food if there is not much on the other two frames. Fill the box out with empty, drawn comb. (You'll need 2 mediums if you run triple mediums rather than double deeps.)
- Add a queen excluder (if used) and several empty honey supers.
- Put the Snelgrove Board on top of the supers, with the side with no doors facing the front.



Snelgrove Board, Step by Step, cont'd.

- Put a box with all the remaining brood, including at least one frame of eggs and very young larvae, over the Snelgrove board.
- Add 2-3 frames of food.
- Put the inner and outer covers on top.
- Open one of the upper side doors in the Snelgrove board.
- 4-5 days later, check for queen cells in the top box. Also, close the upper side door and open the door right below it.



Snelgrove Board, Step by Step, cont'd.

- Open the upper door on the side opposite the one you opened initially.
- 8-9 days after the initial split, close the upper door leading to the top box and open the one immediately below it. Then open the top door in the back of the hive.
- Make no more door changes after 10 days.
- Four weeks after the initial split you should have a new, laying queen "upstairs." The "downstairs" bees will have made a large honey crop with the help of the extra foragers, and not swarmed.
- You can then either combine the two parts, keeping the younger queen, or remove the "split" to another location.



Snelgrove vs. Demaree

How Are they Alike?

- Both methods separate the queen from the young bees.
- Both methods keep all the bees on the same hive stand.
- Both methods need additional equipment.
- Both methods can produce a bumper honey crop.

How Do they Differ?

- Demaree allows transmission of QMP vertically; Snelgrove does not. (Snelgrove is a vertical split.)
- No new queen is raised in Demaree. Snelgrove creates a new queen.
- Snelgrove is done *before* queen cells are started. Demaree can be done with ripe queen cells present.
- Demaree is slightly more labor-intensive.





Next WEIRD Technique: Padgening (J.W. Padgen, 1870)

1. Select a strong colony that is getting ready to swarm, e.g. a double deep or triple medium that has started queen cells.
2. Move the entire hive several feet to one side or another.
3. Set up a new bottom board, single box of wired or plastic foundation, queen excluder, honey super(s), inner and outer covers in the location of the original hive. *Note: this is a good method for making comb honey.*



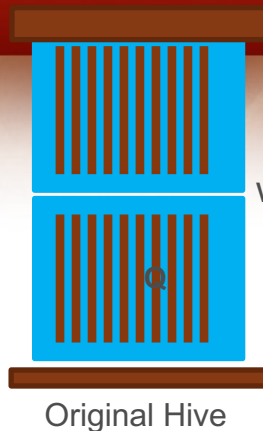
Padgening, cont.d.

- 4 • Locate the queen in the original hive. Move her and the frame she is on to the new hive (in the original location), below the excluder. Be sure there are no queen cells on that frame.
- 5 • Provision the old hive with 2 good queen cells and destroy the rest, or give a mated queen.
- 6 • After a week, move the hive with the cells to the other side of the hive that has the old queen. Be careful not to jiggle the cells!
- 7 • After harvest, combine the splits with the young queen on top.

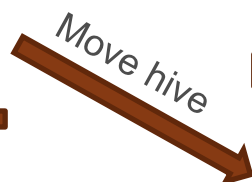


Padgening

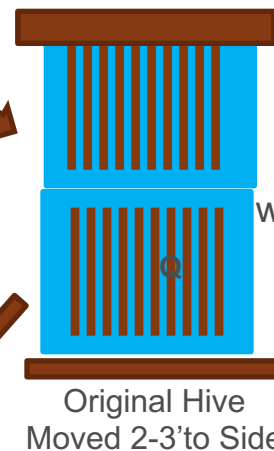
1



Drawn comb with bees & brood

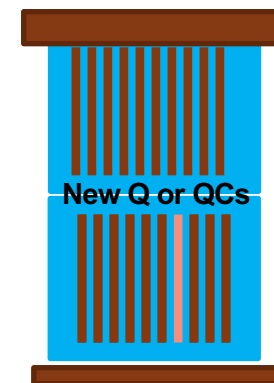
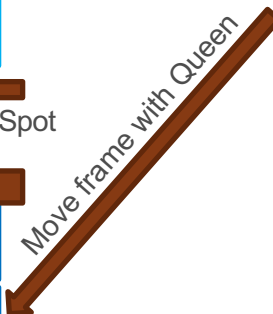
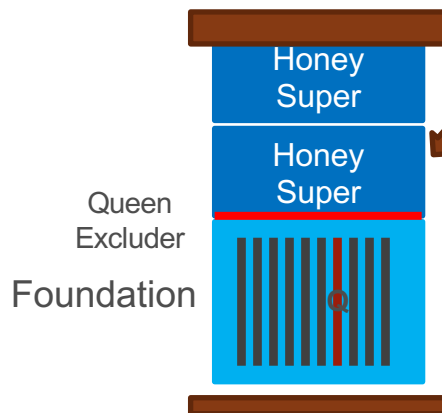


2



Drawn comb with bees & brood

3

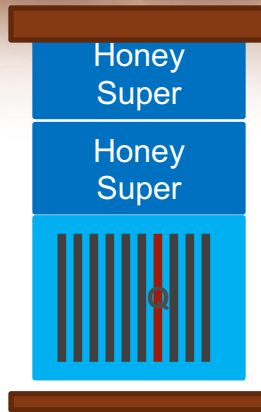


Replace frame with new. Add queen or leave with 2 good queen cells.

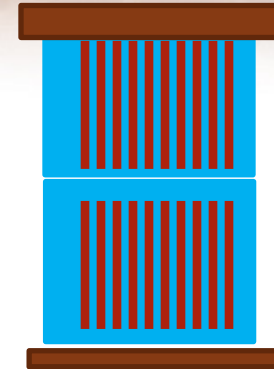


Padgening

3



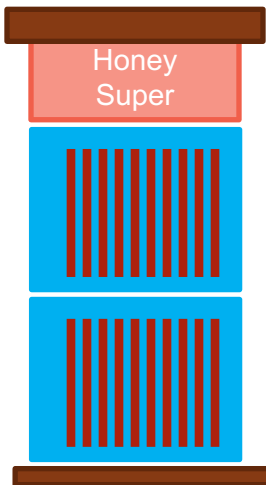
New Hive



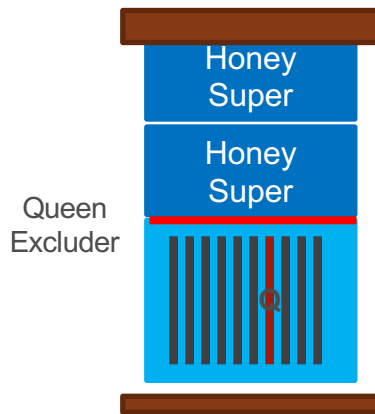
Original Hive

Super Normally

4



Original Hive Moved to Other Side



New Hive



Padgening: What Does it Do?

- Like the other methods, it separates the nurse bees from the queen and bleeds foragers back to the queen's location.
- It gives the queen plenty of room to lay and reduces the population by splitting.
- It results in two colonies rather than one.
- It requires enough space on either side of the hive to accommodate a whole new hive.
If your hives are too close together, you cannot use this method effectively!



I THINK I JUST SHIT MY PANTS



Shook Swarming

- Shook swarming is a way of creating an artificial swarm.
- Its big advantage is that you do it *before* your hive swarms so you're not guessing which hives are going to swarm or, if they already have and you've caught the swarm, which hive the swarm issued from.
- You may have heard the term in conjunction with saving adult bees in a colony infected with AFB.



Shook Swarming

- Select a strong colony, preferably one with uncapped queen cells.
- Move this hive off its stand and set up, in its place, a single box of foundation, with bottom board, queen excluder, several honey supers, and inner and outer covers.
- Shake, frame by frame, $\frac{1}{2}$ to $\frac{2}{3}$ of the bees from the original hive onto a sheet in front of the new hive. You can use the inner cover as a ramp.



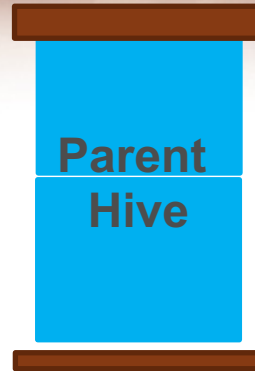
Shook Swarming, cont'd.

- Watch for the queen. Be sure she enters the new hive with the other bees.
- To ensure the bees don't abscond (rare), you can put a queen excluder between the bottom board and single box for 2-3 days. After that, it is extremely unlikely the bees will leave.
- Put the old hive *behind* the new one, with its entrance facing in the opposite direction. Requeen or let them raise their own queen.
- Once the honey has been pulled, combine the hives, keeping the younger queen.



Shook Swarming

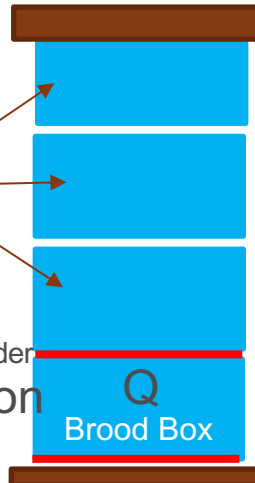
Move parent hive *behind* its hive stand, with its entrance facing in the opposite direction.



Strong hive with queen cells

Original Location, **Front View Before Shook Swarming**

Honey supers



Shake half to 2/3 of the bees AND the old queen in front of a new hive at the original location.

This is a great method for producing comb honey.

Optional queen excluder below brood box left in place for two days

Original location, new hive, **Front View After Shook Swarming**



Shook Swarming

New Hive with
Shook Swarm
at Original Location



Old Hive Placed
Behind New Hive,
Facing in Opposite
Direction



Side View After Shook Swarming

You can combine the hives after harvesting honey, putting the one with the younger queen on top.



Shook Swarming

- This method reduces the overall hive population and increases the percentage of foragers that stay with the old queen but it doesn't totally separate foragers from nurse bees. (Note similarity to Taranov split.)
- You end up with two hives and two queens.
- Because you shake the bees onto foundation, be sure to only use this method during a good nectar flow. Note that, if you were shook swarming to save adult bees in a colony suffering from AFB, you would shake *all* the bees out and destroy the old frames.



So maybe if we get a little more WEIRD, we'll have to do less of this:

