



A Beginner's Guide to Keeping
Bees Thriving in the Boston Area

Beekeepers School

BABA Beekeeper's School 2026



BABA Beekeeping School

Week Eight Setup





What is Covered in this Lesson

- Week 7 Recap
- Announcements
- Agenda
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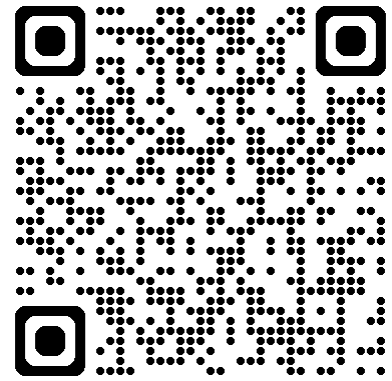
Welcome to our Final Week

□ Week Seven Recap

- From One Box to Two
- Feeding Bees in the Spring
- Small Hive Beetles
- Honey Harvesting Guide
- The focus was caring for your new colony in spring, and we talked about a pest to the honeybee – small hive beetles. The lessons wrapped up with a guide to pulling and harvesting honey



Presentation Materials



- **Presentation Materials Available**
 - Presentations can be accessed at this link
<https://managedmentoring.com/baba-bee-school>
- **Presentation Access After the Course**
 - We will leave the lessons for you post the course close
 - BABA is making arrangements to have them moved to a private area – you will receive information about this via email



This weeks Agenda

- **Hive Maladies, Growing your Colony, Swarm Mgmt**
 - Opening with **Colony Maladies and Diseases**
 - We walk you through **Two Boxes to Three or More**
 - We finish our lessons with **Swarm Management**
 - And we will take some time to close the course down with some comments and some information for you to carry on



- **Questions**

Q&A





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Hive Maladies and Diseases

Lesson | Maladies and Diseases





What is Covered in this Lesson

Know what good looks like

Know what bad might look like

Learn to see healthy bees

Inventory of Pests, Diseases, and Maladies

Overview of Individual Pests ,Diseases, and Maladies

Field Guide Recommendation





First: Know what good looks like

□ Take in Hive Operations

- Before we get into possible problems; We have a suggestion....
Learn what good looks like
 - As you do your inspections, look at the colony. Observe what normal is
 - Typically, things are normal – *so you have plenty of opportunity to learn*
 - Look at the bees – come to be familiar with what healthy bees look like
 - Look at the bee's wings in particular (we will tell you why in this lesson)
 - Look at the brood – pearly white, well fed, size, shape, progression – observe this
 - Look at the cappings – well formed, no holes, concave shape (not sunken, greasy, etc.)



Brood & Bees are key indicators

Good Brood

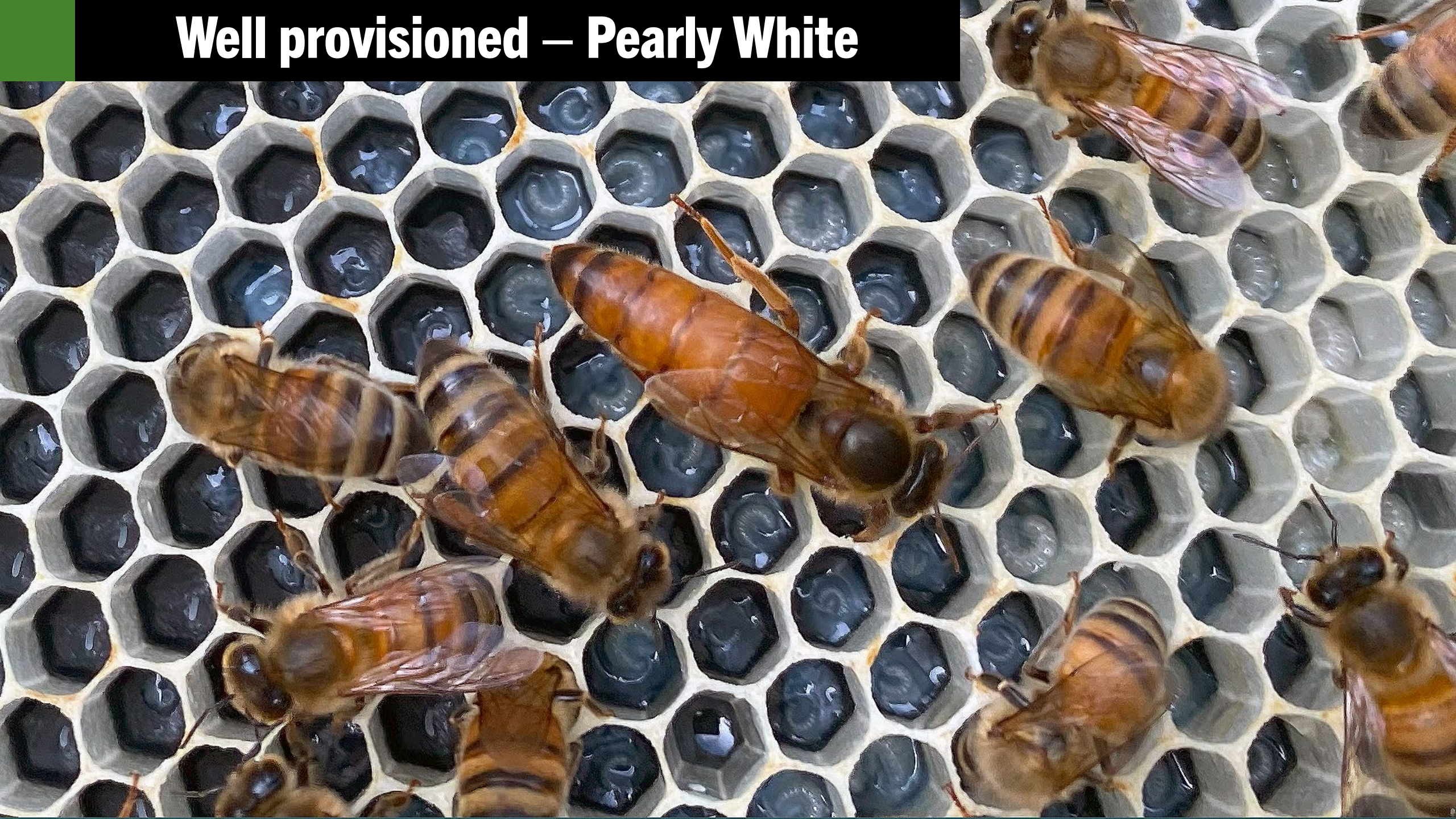
- **Uniform Pattern, Healthy Appearance & Smell**
 - Most Cells full; contiguously distributed from center out
 - Flat light brown cappings
 - Larvae pearly white in appearance, pleasant propolis - wax aroma
 - Well fed; Abundance of clear to light milky wet food in the bottom of the cells with the larva



Brood & Bees are key indicators

- **Irregular Patterns**
 - Shotgun Patterns
- **Greasy Color**
 - Greasy or wet/mottled appearance
- **Unusual Odor**
 - Unusual unhealthy odor
- **Cap Perforations**
 - Holes in the cappings
- **Concave Caps**
 - They should have a slight dome
- **Plugged Cells**
 - Cells bees cap over to close up what is inside

Well provisioned – Pearly White





Uniform Distribution – Center Out

Good Pattern, Center Out Emergence



Nice color, shape, decent distribution



Bees came out of these holes

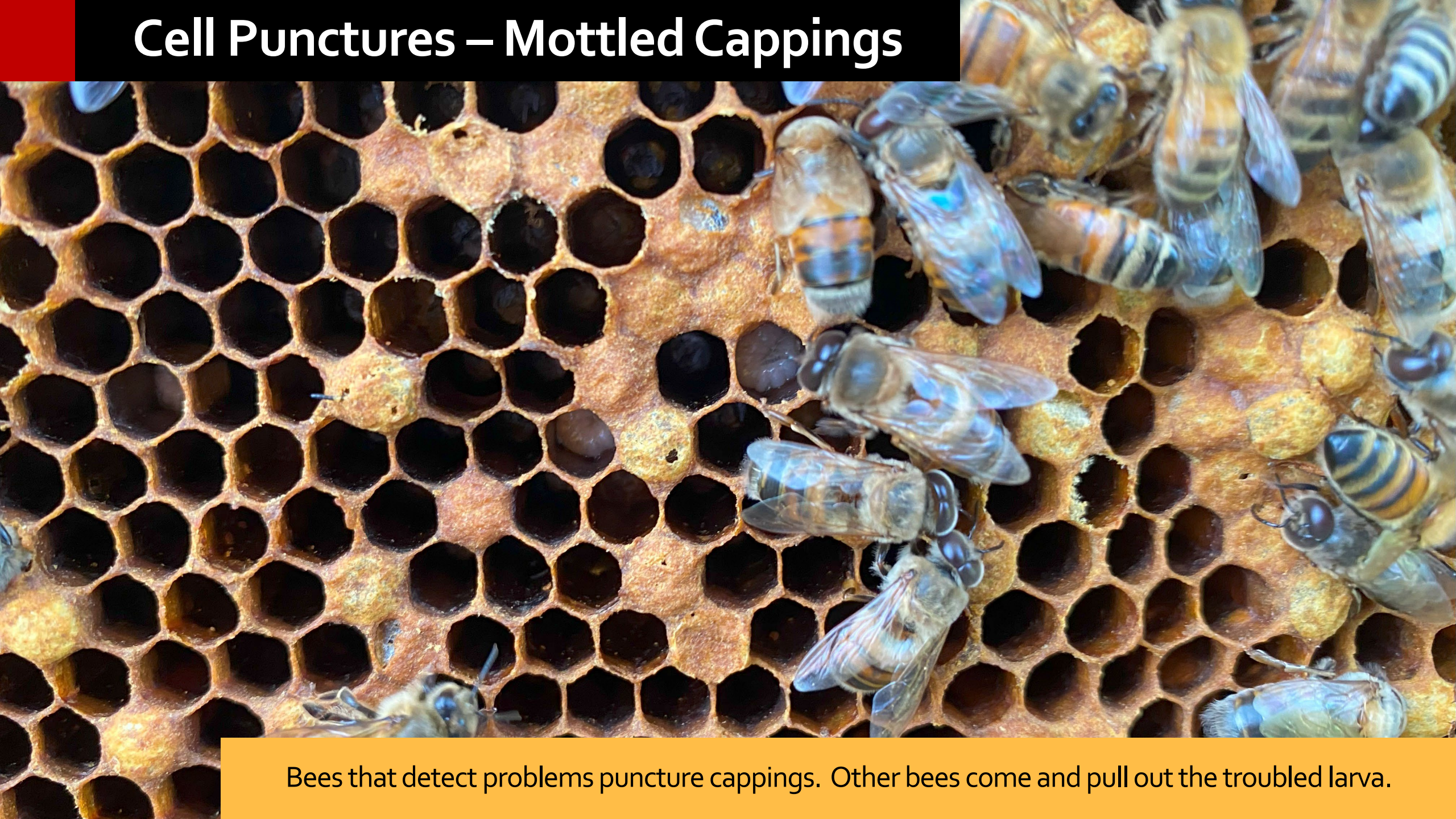
Sometimes as the season progresses, the queen lays eggs in a less uniform pattern. This is a summer frame and shows that she skipped some cells as she worked her way around the brood area.

“Shotgun” Brood – Disease Indicator



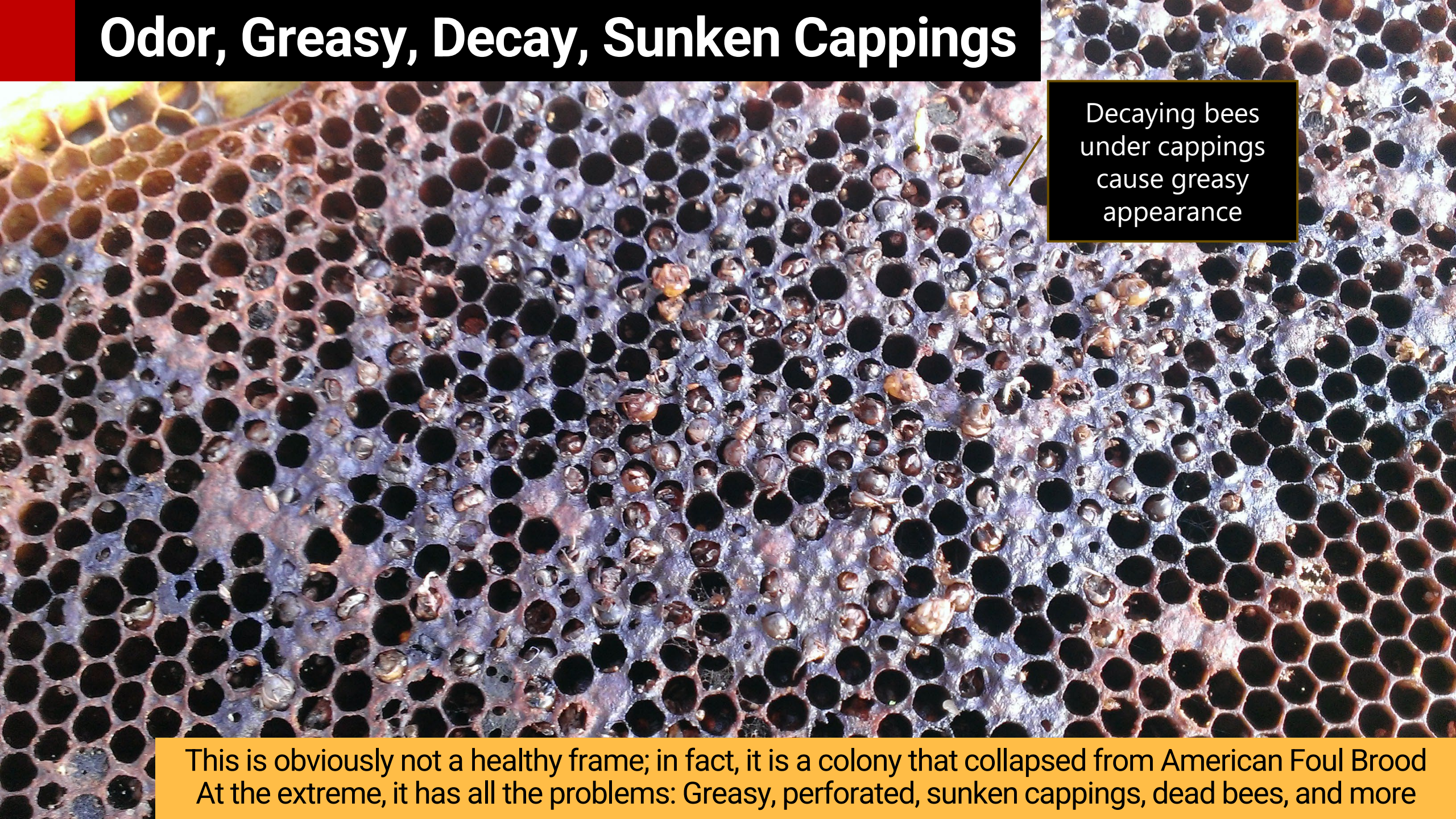
Non uniform pattern – possible indicator of stress in the colony, disease, failing queen or other problems

Cell Punctures – Mottled Cappings



Bees that detect problems puncture cappings. Other bees come and pull out the troubled larva.

Odor, Greasy, Decay, Sunken Cappings



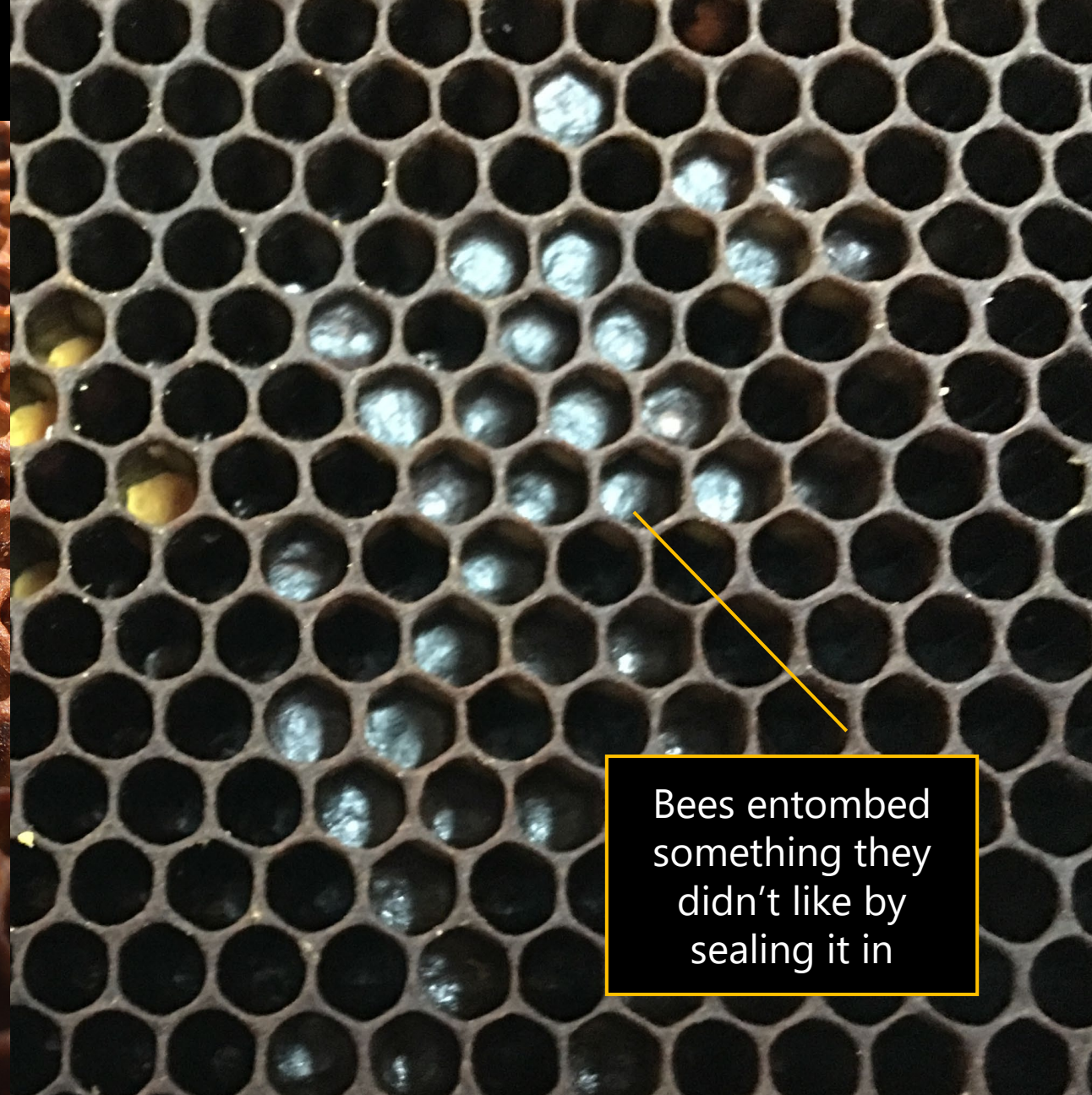
Decaying bees
under cappings
cause greasy
appearance

This is obviously not a healthy frame; in fact, it is a colony that collapsed from American Foul Brood. At the extreme, it has all the problems: Greasy, perforated, sunken cappings, dead bees, and more.

Mite Frass (dried droppings)



Found on the ceiling of the cells
Remnants of mite occupation



Bees entombed something they didn't like by sealing it in

Entombed Pollen



Bullet Drones...
*Drones being laid
in worker cells –
not normal*

Haphazard drone distribution



Brood & **Bees**

Bees and Brood *are the two main indicators*

□ **Bees; Healthy and Well Formed**

- Fresh bees are well formed; plump, and covered in downy hair
- Bees have uniform color patterns, are productive in their movements
- They interact with other bees while going about their routines

These bees are beautiful!





Second: Learn the basics of possible problems

- **The abundance of problems to worry over**
 - There are many identified pests, parasites, and disease to learn about
 - Books go on and on about the various viruses, fungal and bacteria that can impact your bees
 - The truth is, widespread maladies are very rare – and not common at all
 - Most beekeepers will not see the fringe ones in their lifetime
 - Some however are more prevalent, and you need to learn them specifically
 - Additionally, the big one – American Foulbrood – is an instant red flag and needs to well understood (the good news is, this too is uncommon)



Inventory: Pests and Predators

- Varroa Mite**
- Small Hive Beetle**
- Wax Moths**
- Tracheal Mite & Bee Louse**
- Wasps & Hornets**
- Spiders, Ants, Pray Mantis, Dragonflies**
- Birds**
- Mammals**
 - Bears, racoons, skunks, honey badgers, etc.



Inventory: Maladies and Diseases

Nosema Ceranae has been reclassified as *Vairimorphia Ceranae*

Bacterial Diseases

- American Foul Brood
- European Foul Brood
- Powdery Scale
- Septicemia
- Spiroplasmosis

Fungal Diseases

- Chalkbrood
- Stonebrood

Protozoan Diseases

- Nosema / Vairimorphia
- Amoeba Disease



Inventory: Maladies and Diseases

Viral Diseases

- Deformed Wing Virus**
- Sacbrood
- Chronic Bee Paralysis**
- Queen Cell Virus

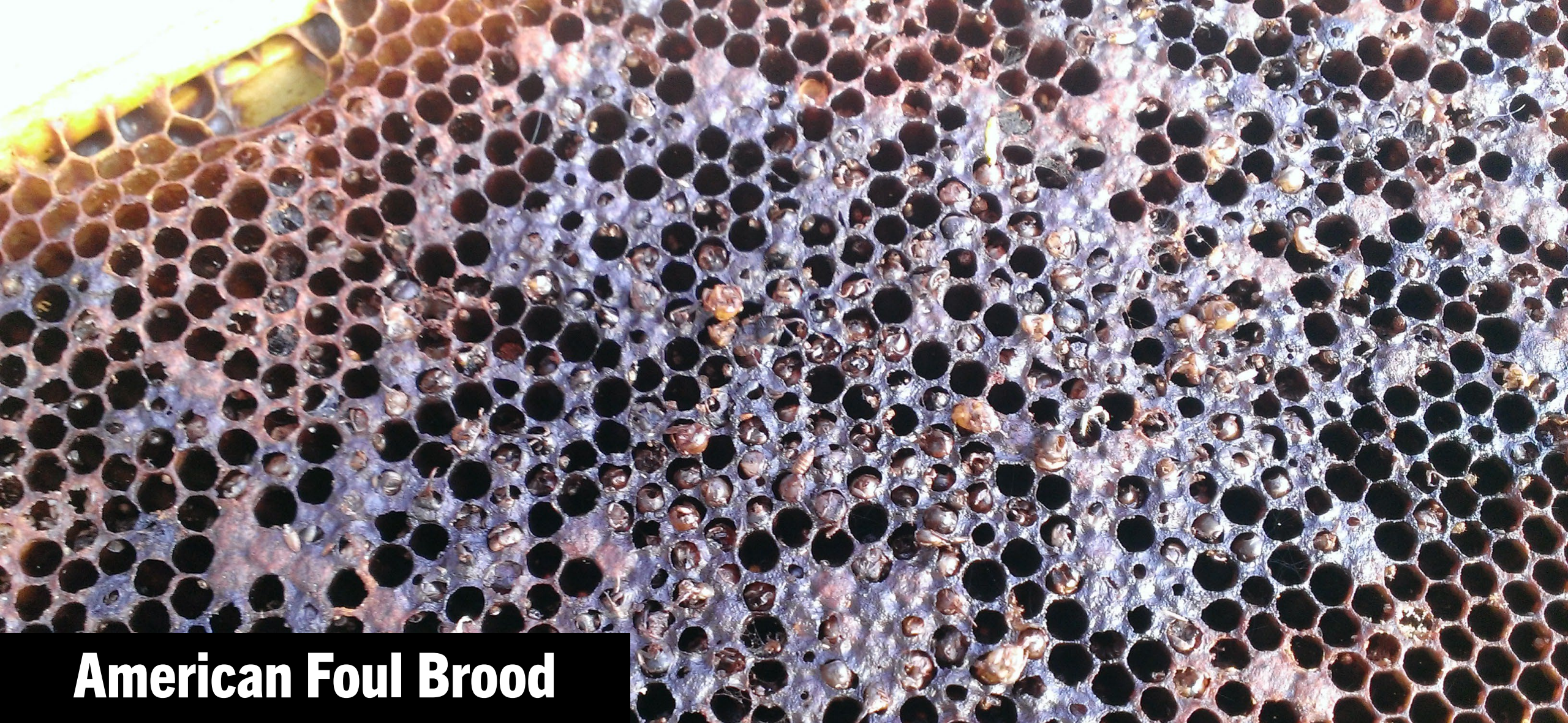
- Acute Bee Paralysis
- Kashmir Bee Virus
- Filamentous Virus



Inventory: Syndromes

Syndromes

- **Parasitic Mite Syndrome (PMS)**



American Foul Brood

American foulbrood (AFB) is an infectious brood disease caused by a spore-forming bacterium.

It is the most widespread and destructive of the brood diseases



AFB Key Facts

AMERICAN FOULBROOD (PAENIBACILLUS LARVAE)

Bacteria Disease

□ Details

- Impacts Brood; not adults, Not stress related, **Highly Contagious**

□ Formation

- Starts as a rod for about ten days and the progresses to a spore stage
- Spores are inadvertently fed to young larvae by the nurse bees.
- They then germinate in the gut of the larva and multiply rapidly, causing the larva to die soon after it has been sealed in its cell.



AFB Death and Transmission

- **Death of the larva**
 - Death typically occurs **after the cell has been capped**, during the last two days of the larval stage or the first two days of the pupal stage.
- **Transmission**
 - Nurse bees distribute spores after cleaning out dead larva impacted by AFB; this includes coming into contact with honey
 - Honey in an infected colony becomes contaminated with spores and can be a source of infection for any bee that gains access to it.



AFB Symptoms / Appearance

□ Capping Appearance

- Irregular brood patterns
 - Scattered and irregular pattern of capped and uncapped cells.
- Infected cells are discolored, sunken, and often have punctured cappings.
 - First the capping of the diseased cell becomes moist and darkens in color.
 - Then as the larva shrinks, the capping is drawn into the mouth of the cell so the convex capping becomes concave.
- Impacted cappings can become greasy in appearance (late stage)



AFB Persistence

□ Longevity

- **Survives for Decades:** The spore stage is extremely resilient to heat, cold and drying.
- The spores can survive on all stored beehive components, including honey.
- Using stored equipment contaminated by spores will lead to a new infection even after years of storage.



AFB Late State Appearances

□ AFB Scale

- The final state is a very dark brown and referred to as scale.
 - Scale is a rough, dried carcass that lies uniformly on the lower side of the cell and extends from just below the mouth of the cell down to the base.
- Scale carcasses stick very tightly to the cell and can be removed only with great difficulty.

□ Pupal Tongue

- If death occurs at the pupal stage, the tongue of the pupa (false tongue) protrudes from the scale across the cell (this is not always present)

Odor

The odor of dead brood is very characteristic

It smells like glue or a sour fishy smell



American Foul Brood

Rope Test: In late stage AFB, you can put a probe in the cell and a gooey rope will form as you exit

Stick the probe into the cell, swirl it around, pull it out: the contents will rope



If you see brood disease; Suspect AFB

- **Brood disease in the form of goeey capped larva**
 - If you see this something is wrong... Call the State Apiarist
 - They will come out immediately if there is a suspected case
 - Even if you are not sure, you are not a nuisance – they are obligated to come
 - There are tests for AFB (milk test, rope test, lab tests)
 - The apiarist can inspect and test for you to confirm
 - If they find you have AFB
 - They will give you instructions (burn the hive, remediate, or other)

European Foul Brood

□ EFB

Bacteria Disease

- *Brought on by Stress*
- *Impacts brood **before capping***
 - *Vs. AFB which impacts capped brood*
- *Larva is twisted, dried, off color*
- *Replace all brood comb, requeen, feed, and get the colony back to a healthy state*

□ Viruses

- *Black Queen Cell*
- *Deformed Wing Virus*
- *Chronic Paralysis Virus*
- *Sacbrood*

Hairless Black Syndrome
Bees are chewed by other bees

□ Paralysis Diseases

- *Virus underpinning – often brought on from Varroa Mite impacts*
 - Trembling Bees, K-Wing, Deformed (Shriveled Wings), hive abandonment
- *Appears with colonies that suffer from high virus exposures*
 - Secondary to heavy mite infestations
- *Get the mites under control*

Paralysis Diseases / Viruses

Fungal Diseases

□ Fungal Diseases

- *Ingestion of fungal spores cause mortality to the brood in development*
- *Chalkbrood appears in the cells as shown*
- *Additional, nurse bees will pull out impacted larva and deposit them at the entrance*
 - You will notice chalkbrood 'mummies' that look like pieces of broken chalk

Example of
Chalkbrood

Example of
Chalkbrood Mummies

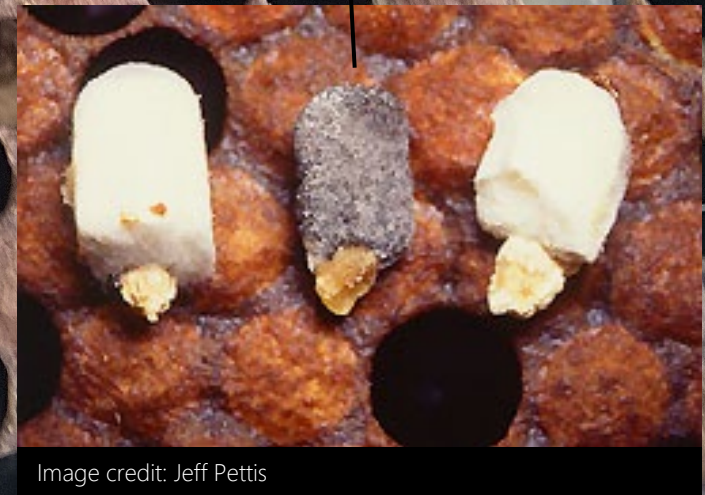


Image credit: Jeff Pettis

□ PMS

- *Impact often derived from varroa mite infestations*
- *General, often rapid, collapse of colony operations*
- *Sick bees, poor patterns, low populations, several virus laden problems all at once*



Nosema

Microsporidian Parasite

- *Causes gut problems for the bees and food absorption difficulties*
- *Bees that are impacted may die outright, and could demonstrate gastric distress*



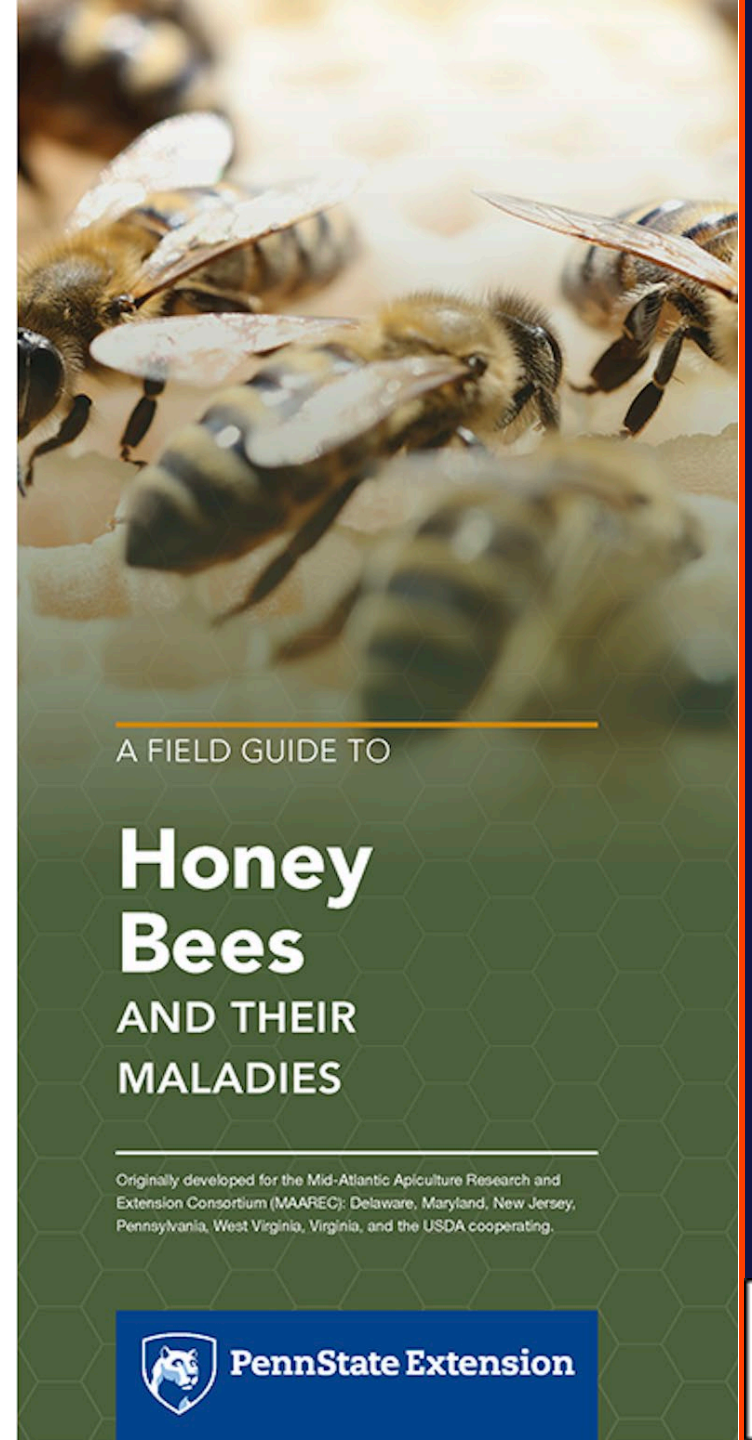
Nosema Apis & Vairimorphia Ceranae



Field Guide Recommendation

□ Recap

- Know what good looks like
- When you see something that is off, do some research
- **We recommend this field guide**
- It lists possible problems you might encounter
- It provides background and photos for reference
- It tells you what you need to do to remediate



A FIELD GUIDE TO

Honey Bees AND THEIR MALADIES

Originally developed for the Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC): Delaware, Maryland, New Jersey, Pennsylvania, West Virginia, Virginia, and the USDA cooperating.



PennState Extension



- Questions

Q&A





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Summer and Fall Feeding

Lesson | Summer and Fall Feeding





What is Covered in this Lesson

Reasons to Feed

Supplemental Feeding

Evaluating Feeding Requirements

Feeding Guidance



Feeding in Summer

□ Colony Assessment

- As you do colony assessment for feeding, you can review the various frame constructs and observe if they have the right mix.
- If everything is in order, then perhaps you can forgo feeding.
- If not, then you may be well served to provide supplemental feeding through summer to carry them to a fall nectar flow.



Areas of Dearth

Definition

Dearth: a scarcity or lack of something

- **Some areas experience dearth**
 - Some location experience a lack of resources to support hive functions
 - Bees often are not challenged with finding pollen, but it might be hard depending up on the season, to find nectar and/or water.
 - This is especially true when spring or summer are abnormally dry
 - You might be tempted to believe that bees can get by
 - Do not stress the bees by making them fend for themselves; especially for first year colonies.
 - Assess the stores, and if need be, provide them the supplemental feeding.



Review the resources by reading frames

□ There should be:

- A handful of frames in operation where brood is being reared
 - Note: Some queens do slow down quite considerably, but as a rule of thumb, there is always some brood from earlier lingering (pending emergence), or a new round getting started
- Pollen and Nectar Reserves
 - There should be some or many frames of resources adjacent to the brood nest.
- Capped Honey
 - Both across the tops of the frames, and in the outer areas of brood boxes



Brood Frames (in Particular)

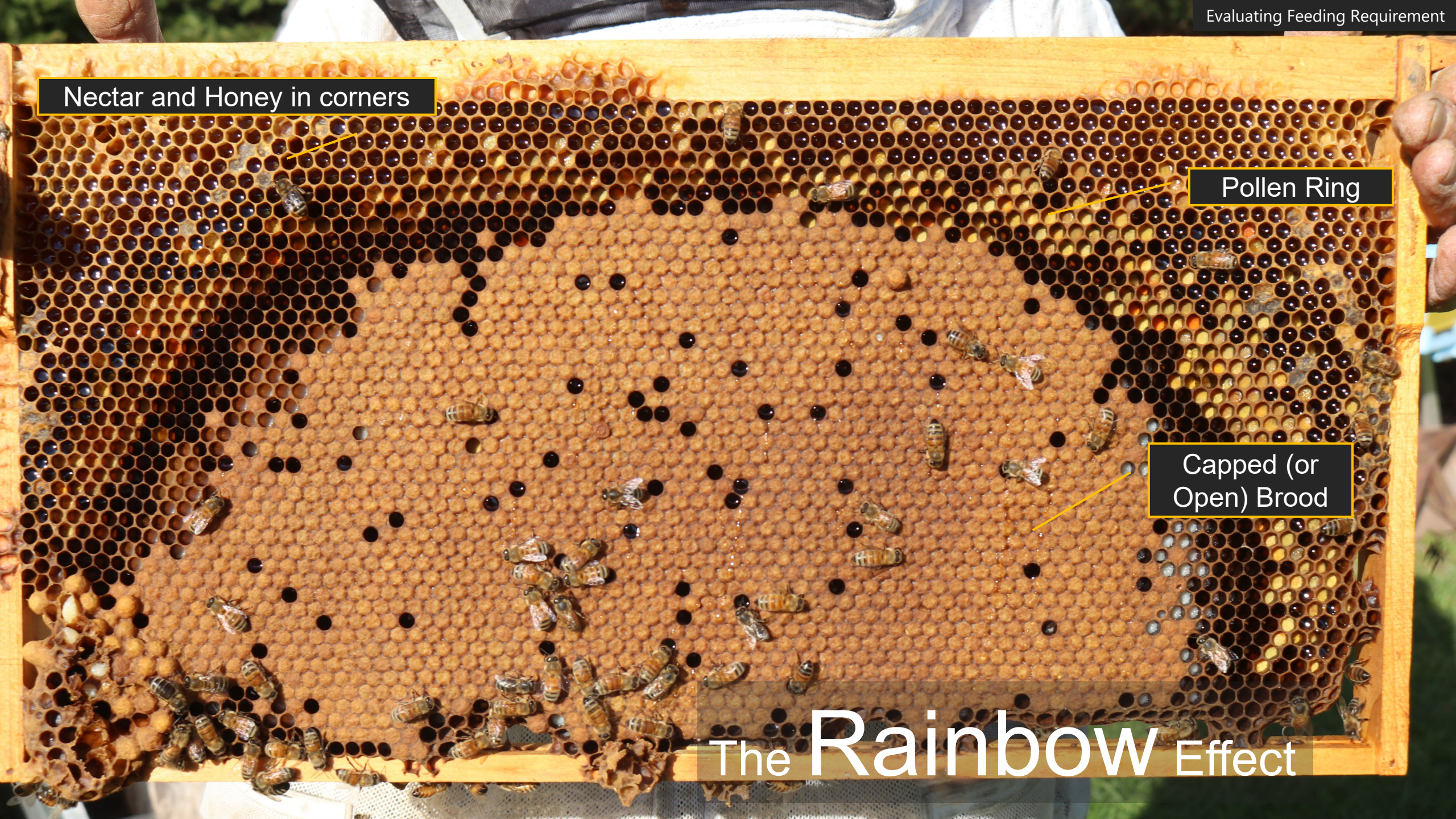
- **Brood in progress (Eggs and Young Larvae)**
 - New brood should be reared in reasonable ways
 - They are well provisioned by the nurse bees; Plenty of royal jells in the cells
 - To the opposite, in lean times, new bees endure low food supplies in the cell while they develop. Not wet, and not well provisioned, but almost to a dry bottom in the cell
 - There should be nectar in and around the developing brood with stores in the upper corners of the brood rearing frames
 - There must be adequate pollen stores in and around brood being raised
 - Remember: Trust the rainbow and reviewing what a good frame has

Nectar and Honey in corners

Pollen Ring

Capped (or Open) Brood

The Rainbow Effect





Polished Cells,
Ready for Brood



Feed 1:1 in Summer, 2:1 in Fall

- **Maintain bees on 1:1 Sugar Solution**
 - A mix of one part sugar to one part water, by weight or volume (it doesn't matter) provides food for bees
 - Food serves to keep colonies nourished, and it stimulates the colony by providing a faux nectar flow that allows for the colony to keep operating
 - In contrast, slow nectar forage without supplemental food, can result in a colony scaling back production of brood to much lower levels
 - 2:1 for Storage and Reserves
 - Two parts sugar, to one part water is often looked at by the bees as reserves to be placed into cells, dried, and capped for future use. This we do for winter...



Pollen Supplements

- **Feeding Pollen to Colonies – is it required?**
 - The Mid-Atlantic has adequate pollen supplies all season
 - No matter what time of year, with an adequate work force, workers will be able to find pollen
 - When pollen is scarce in nature, bees scale back. Pollen dropout is a genetic trigger to winter bee switchover
 - Pollen Supplements may do harm...
 - Feeding supplements may thwart natural winter bee development as it interferes with the signal when scarcity is normal in nature



Unique Situations: Dearth of Pollen

□ Feeding Pollen when needs require

- The reason to feed pollen is to provide protein for developing bees
 - If you are in a special situation where you need to build bees, and pollen is required, place pollen patties in proximity to the center of the brood nest
- “Deck of Cards”
 - One thing to know about pollen patties is colonies generally are slow to consume them.
 - This means what you feed – the actual pollen patty you place in the hive – should be no bigger than a deck of cards.
 - Place it on the top frames of the bottom brood box, and under the upper brood box



Do Not Over Do It

- 1:1 Sugar Solution
 - Like any other time do not overload the colony with an abundance of sugar solution
 - Start out small (1 to 2 cups). If they take it down, up the quantity some.
 - If you see the bees hoarding, and cells are being flooded with sugar solution, scale it back. Try to find the right balance for feeding, without enduring wet storage.



How Long?

- **Maintain until fall plants appear**
 - Indicator plants for the fall forage season in the Mid-Atlantic include Goldenrod, Asters, and other early fall forage
 - When you see foraging plants blooming you can scale back any summer feeding that you are doing if the nest is wet
 - Note that some pockets have a weak fall flow, and you might want to keep viewing the conditions in the hive to see if you should keep feeding
 - Bees can use natural fall forage plants to maintain everyday feeding
 - In fall, when leaves are on the cusp of turning, switch to 2:1 ratio



Questions

Q&A





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From Two Boxes to Three or More

Lesson | Building Above the Brood





What is Covered in this Module

Building Above the Brood Nest

Progressing the Buildout

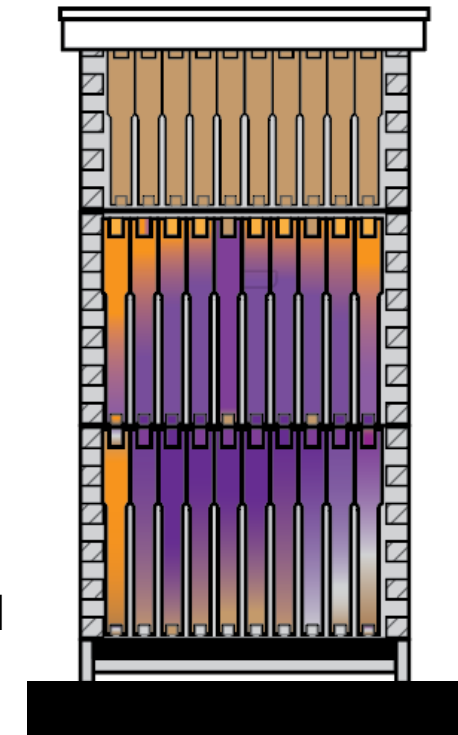
9-Frame Concept

Build Now for the Future



Building Above The Brood Nest

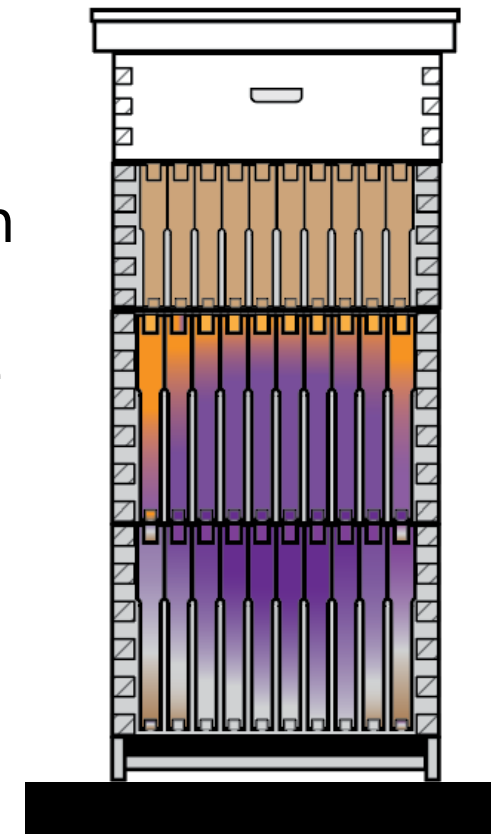
- **Building Medium Supers**
 - When the first two boxes are finished, and you have a full-sized colony
 - Consider getting honey supers built out.
 - Building out supers – 10 Frames (unless of course you are using 8F equipment)
 - It may seem obvious that you would put 10 frames in a 10-Frame box, but there is a point to be explicit, as we will tell you about using only 9-Frames for collecting honey later in the lesson.
 - 10-Frames, set shoulder to shoulder, close together, centered between the walls of the box, just like building deeps.





Feeding Option

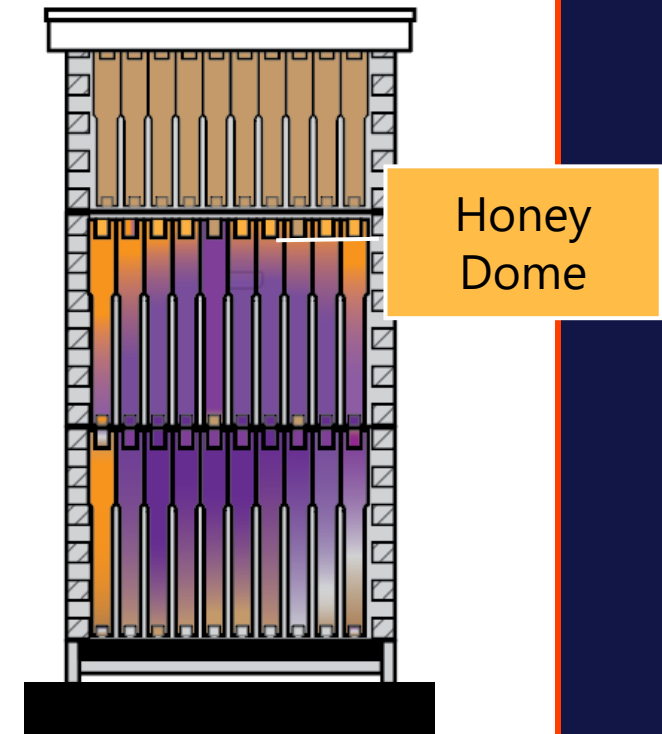
- **Feed if Needed**
 - If you are in the nectar flow, and you have a large population of bees still emerging, bees can sustain to build out the wax needed
 - If the forage season is tapering off, and new bee production is slowing down you may be able to sustain comb development by feeding
 - This can stimulate brood rearing just a little long into the season and provide nectar for wax making bees





Queen Excluders?

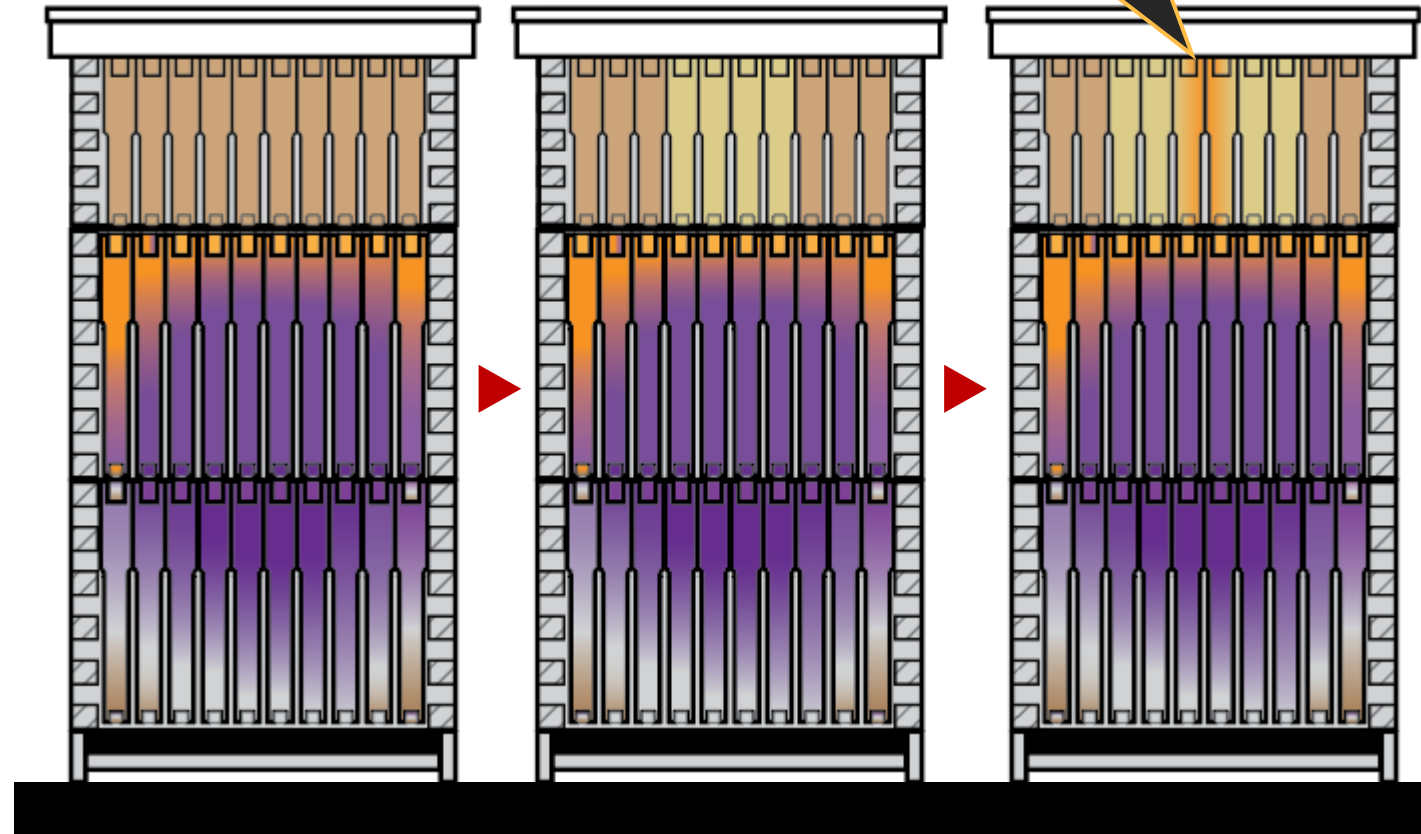
- **Not Really Needed**
 - Queens usually stay below the honey dome
 - As the season tapers off, queen production slows
 - The queen will go back into areas of comb where bees have emerged, and focus laying there
 - They can, but it is rare, go north to honey boxes. However when comb is not fully drawn, they will like not go there.
 - Queen Excluders > Detrimental to Progress
 - They really are a barrier and get in the way of bees passing through; slowing progress





Progressing the Build Out

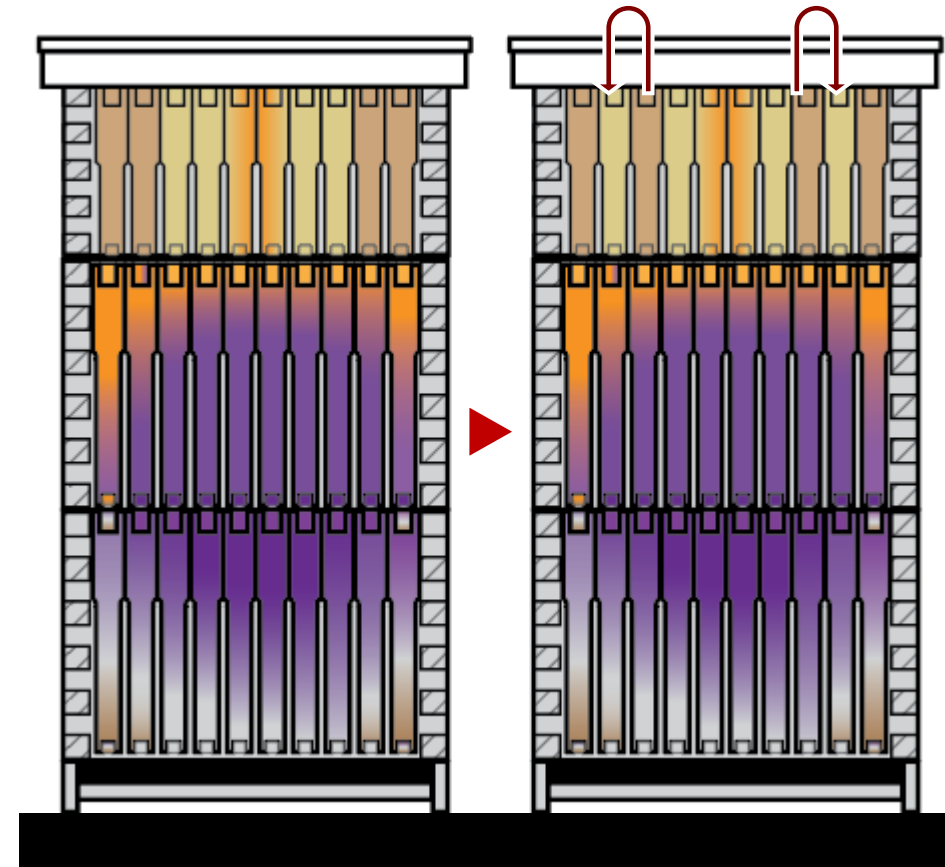
- Likely Bees will build the center frames to start





Build Progression

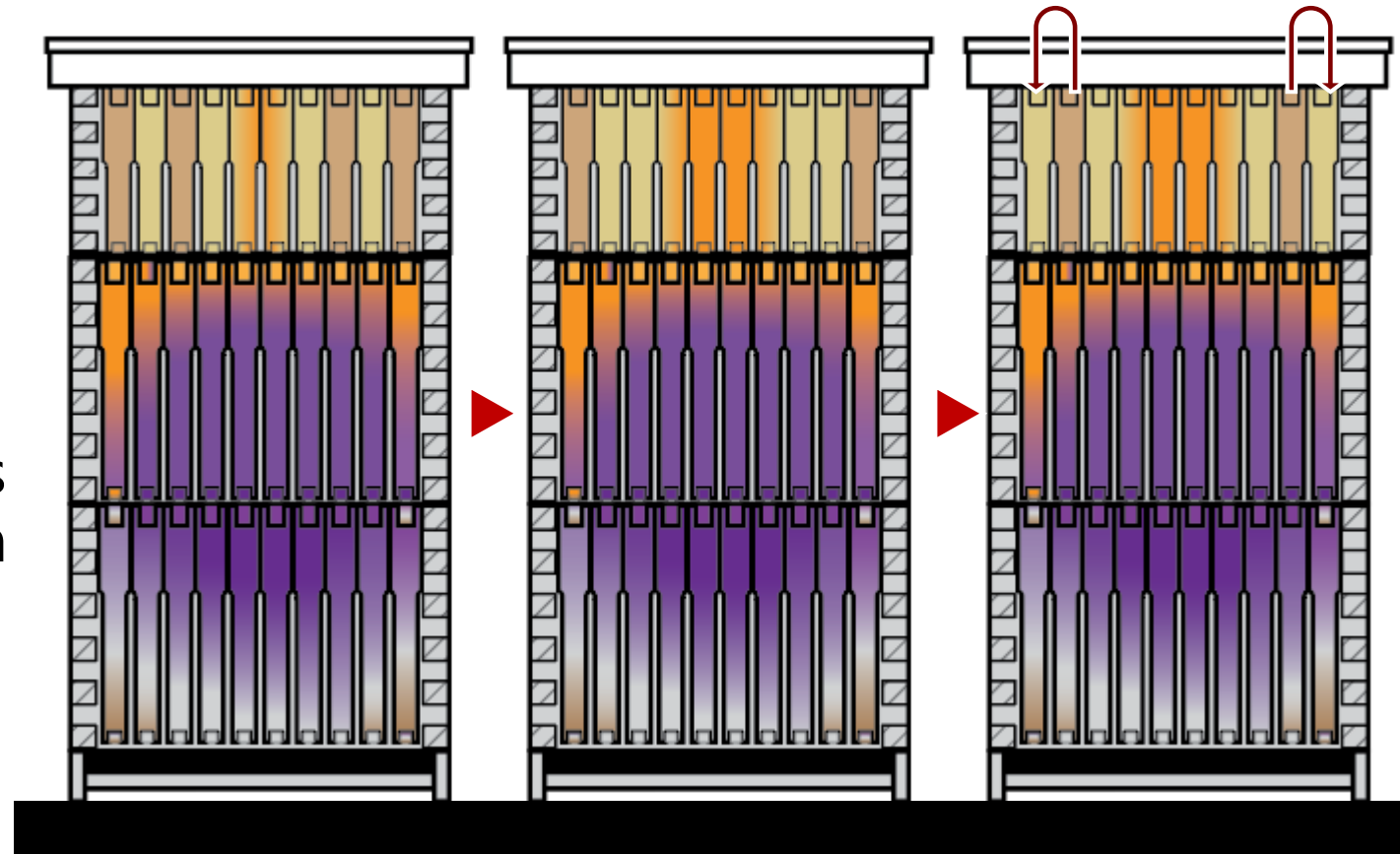
- **When they are getting to the outside...**
 - Switch built frames outward
 - Bringing unbuilt frames inside
 - Placing built out frames to the outside helps to thwart wonky comb buildouts





Progressing the Build Out

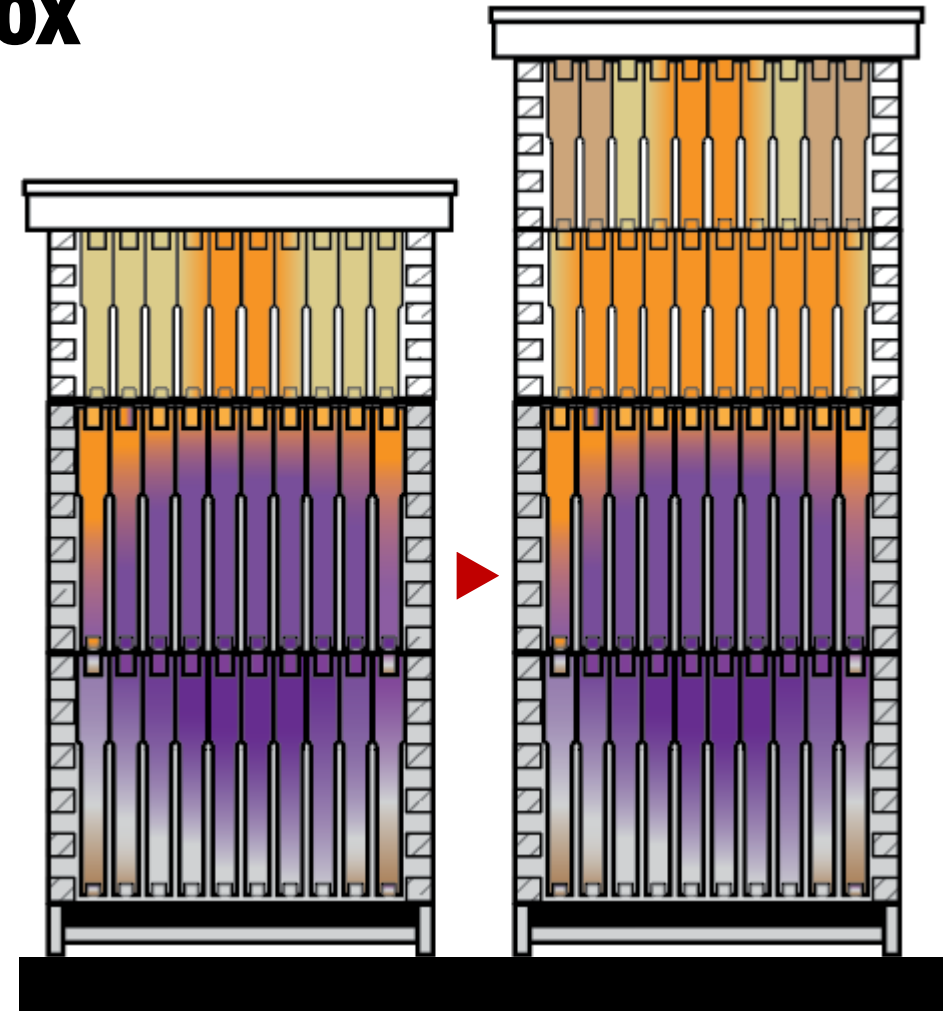
- **Switch exterior frames**
 - Continue to rotate unbuilt frames inward until all frames are fully drawn





Do the Same for the second Box

- **When the first super is mostly drawn out...**
 - Add the second box
 - As long as they keep going, add boxes and get foundation drawn out
 - Consider moving some drawn comb up to entice the bees to build up
 - They will store nectar in available comb for as long as the flow is going





How far into the summer will they build?

□ It depends

- Bees will build comb if they can sustain the **formula** to do so
 - **[Bees of the Right Age] + [Carbohydrates] + [Warm Conditions]**
 - Some colonies will keep building into summer
 - And some seem to stop when the nectar flow tapers off.
- Keep feeding them – it stimulates more bees, and it provides fuel
 - This can prolong the time that bees would be able to ‘manufacture’ wax
 - Without it the upper boxes may sit untouched



Running Nine-Frames

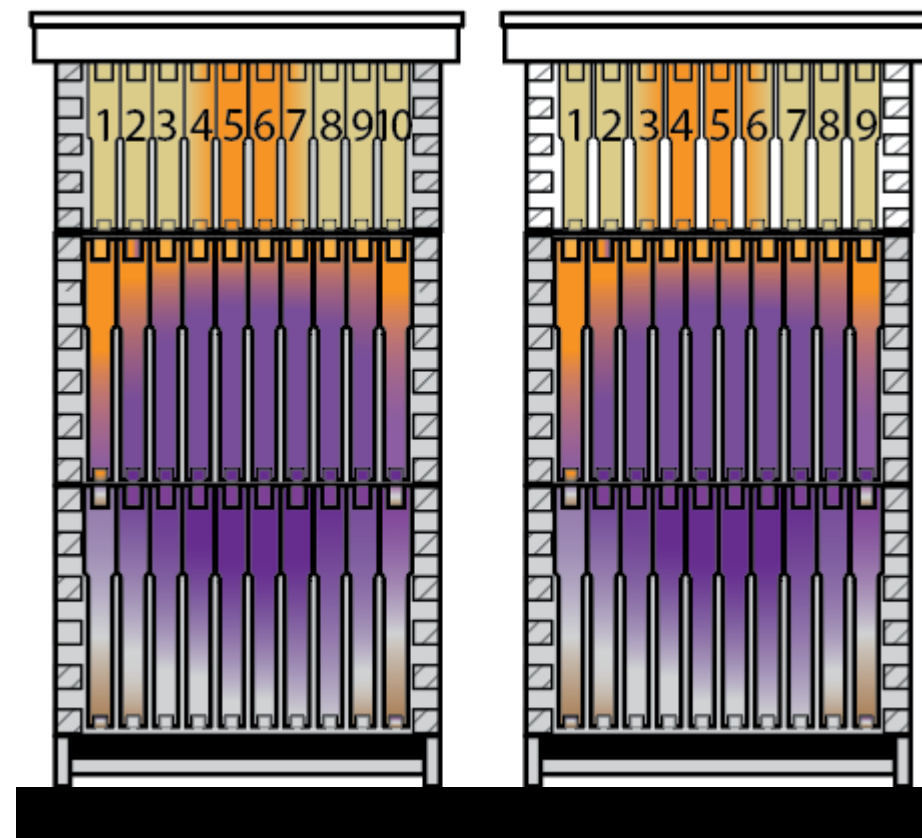
**Running 9-Frames in Honey Supers for Easier
Extraction**



Reminder

Optional 9-Frame Switch (Recommended)

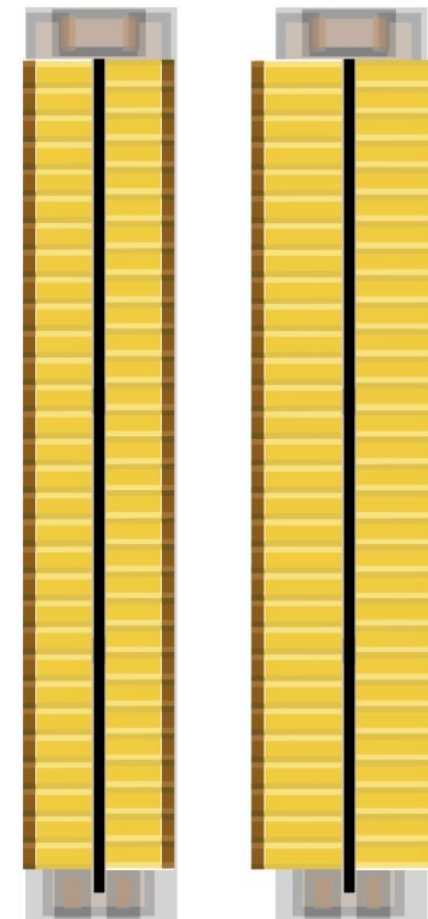
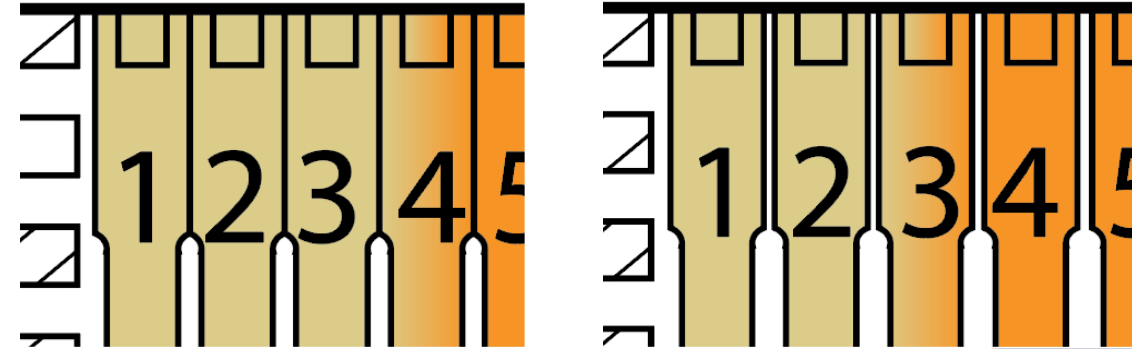
- **Running 9-Frames**
 - It is very customary to switch honey supers to 9-Frames
 - This is an intentional ploy that results in bees building deeper cells
 - Bees will build out to the adjacent frame face and fill the gap
 - This causes the capping on the face to out past the frame face, thus making it easier for beekeepers to carve off the capping for honey extraction





Point of Order

- **An Odd Notion (9-Frames)**
 - A time and effort saver when it comes to uncapping comb when the comb face proceeds past the frame edge
 - It makes cutting off the comb face exponentially easier when performing honey extraction work



Given extra space, bees will build deeper cells

This places the capping out from the frame edge



Questions

Q&A





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Swarm Management - Triggers

Lesson | Swarm Triggers





What is Covered in this Lesson

Recognizing Swarm Triggers

Systematic Triggers

Biological Triggers

Recognizing Swarm Indicators

Precursors to Swarming

Swarm Indicators

Observable Indicators



What is a trigger?

- **Trigger: Condition that incites an action**
- **Swarm Triggers, An overview**
 - Crowding, both bees and resources
 - Worker motivations – and queen signals to the workers
 - Chemical communication breakdown
 - Genetics
 - Warmer weather and longer days

I have classified triggers as Systemic and Biological

Systemic:
Something in the operation is in play

Biological: A biological factor is in play.



Crowding as a trigger to swarming

- **Crowding comes in two forms:**
 - First is a simple over abundance of bees.
 - In the case of abundance of bees, vertical bees emerging from the cells become horizontal bees on the face of the comb.
 - Bees simply sense the crowding and that there is no room to work





Crowding as a trigger to swarming

- Crowding comes in two forms:
 - Second is a lack of space to work;
 - Lack of space for the queen to lay eggs
 - And/Or no place to store incoming resources
 - One impact: If there are no cells to store nectar outside of the brood area, bees will use the brood area and the queen will have no place to lay eggs.





Crowding and the Queen

- **The queen avoiding the bottom of the hive**
 - If a colony is really active, and congested, the queen will not police the bottom of the brood chamber due to an abundance of coming and going.
 - When her presence is not there, workers are free to build queen cups
 - It is speculated that in less crowded conditions her presence might thwart this activity.



Worker Motivations?

One takeaway: a colony is a complex eco system in which **the queen doesn't necessarily drive all of the decisions.**

- **Workers messing up the program?**
 - Sometimes it is observed that even if you provide proper supers with drawn comb the bees will fill the brood nest anyway.
 - Some speculate hive crowding, or even eagerness at the abundance of resources, prevents foragers from going up to the storage area you provide so they drop it off in the brood nest.
 - Workers know things that influence colony outcomes?
 - The Outside World - forager bees have been outside the hive and know the conditions.
 - Workers can sense how old the queen is and they know the quality of the offspring she's producing.
 - They also know the ratio of bees being produced - drones to worker bees.



Work Motivations: Idle Bees

- **Foragers return to the hive full of nectar and there is no place to put it.**
 - Since there is no place to place the nectar, they hang around waiting for things to change. These idle bees cannot return to foraging.
- **Unemployed Bees**
 - There is an idea that with significant congestion, some bees are unemployed.
 - Bees hanging around with nothing to do have to go.





Worker Motivations: Queen Pheromone

- **Queen Pheromone drives hive cohesively.**
 - The bees in the hive come in contact with the queen and distribute the pheromone throughout the hive.
 - Queen pheromone suppresses worker ovary development and worker impulses to swarm.
 - The distribution of the queen's pheromone among other things demonstrates she has a presence and inhibits the colony from building queen cells.





No Room for Eggs

- **What causes a queen to lay in queen cups?**
 - Why would she do it?
 - What if she simply ran out of room?
 - All cells on the face of the comb are full
 - And with no place to lay eggs on the face of the comb, a queen cup is as good a resource as any





Swarmy Bees

- **Some bees are “swarmy” by nature.**
 - Certain races of bees have a propensity to swarm more often or conditions contribute to swarming
 - Carniolan (*Apis Mellifera Carnica*) bees are one of the bee races that are said to swarm more often than other types of bees.
 - Rumor has it that Russian bees are also “quote” “un quote” swarmy
 - The truth is they build up quickly and if beekeepers do not pay attention, they get to swarm strength quickly and in the trees they go...
 - It is genetically in the disposition of some bees to swarm more often.



What is an Indicator?

- **Indicator: Signs that swarming has potential**
- **Swarm Indicators, The list**
 - Congestion: To many bees, congested brood nest and storage
 - Queen Cells: Cells that have royal Jelly
 - Early Season Appearances of: Drones and White Wax
 - Queen State: Age and Appearance
 - Worker Behavior - Listlessness



First, what do they need?

If they had notions to swarm...

- **A Healthy Hive**
 - Nature demands that it be a working, established, colony
 - “Runty hives” do not swarm, they build for survival
- **Daughters to replace the queen that leaves**
 - To be clear, the long-standing queen leaves with the swarm
 - She leaves the hives to her daughters
- **Bees to go...made up of a mix of ages**
- **Bees to stay...to keep the operation going**



Swarm Prevention Window

- **For a typical colony...**
 - Reminder that swarming typically occurs within a few weeks after drones emerge... Keep in mind that drones enable mating to be possible
- **Consider drones as the first marker**
 - Drones emerge after 24 days development. It then takes them at least 6 days to be sexually mature.
 - Theoretically, if you could know when the first drones in the neighborhood were started, you could predict the first possible days for queen mating and forecast the start of swarm season



Queen Cells; Capped or with Royal Jelly

- **Queen Cups with Royal Jelly**
 - The mere presence of queen **cups** is not an indicator.
- **Capped Queen Cells – Queen replacement underway**
 - Time of year taken into consideration of course



Congestion Bees and Hive

- **Hive Congestion**
 - Lack of room to lay eggs
 - Lack of room to place food
 - Overcrowding of frames





Congestion Bees and Hive

- **Hive Congestion**
 - Lack of room to lay eggs
 - Lack of room to place food
 - Overcrowding of frames

- **Abundance of Bees**
 - Unemployed bees
 - Bearding





Queen State and Appearance

□ Queen Age

- Younger queens have less propensity to swarm
 - Queens grow old and lose their vigor. Two keys are lower egg production and less pheromone.
 - When you have an old queen, the logical answer is to replace her with a more vigorous one.

□ Queen Appearance

- If you could be observant enough to see this, you might encounter that:
 - The queen slims down and is kept from laying an abundance of eggs.
 - This can be observed by a difference in brood patterns





Hive Lethargy

□ The observed slowdown

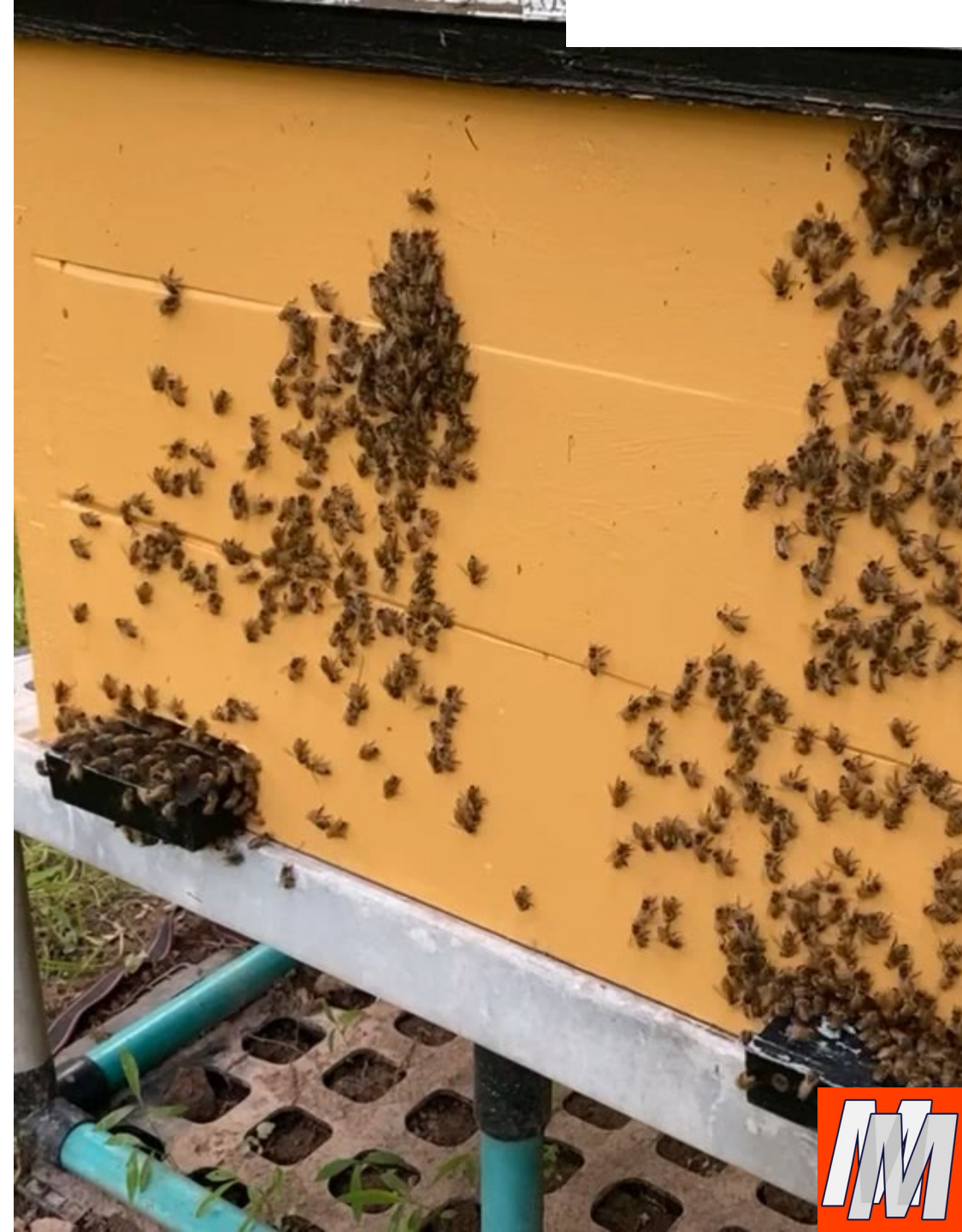
- *Prior to swarming, the bees that will leave with the swarm need to prepare*
 - They will knock off activities to rest and gorge on food
- *If you could observe:*
 - The hive will be less productive in the period preceding a swarm





Swarm Instigators

- **Bee fervor**
 - Prior to swarming, some of the bees will instigate and excite those going along
 - They will run around the colony in a heightened state
 - They bump, buzz, shake, and cajole the other bees. Sometimes they even grab other bees and shake them.
 - It is common to see this in a hive that is preparing to swarm





Questions

Q&A





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Swarm Management

Lesson | Proactive Swarm Management





What is Covered in this Lesson

Swarm Probability Assessment

Proactive Measures

Swarm Management Tactics

Expansion of the Brood Nest and/or Storage Area

Splitting to relieve congestion

Seasonal Progression



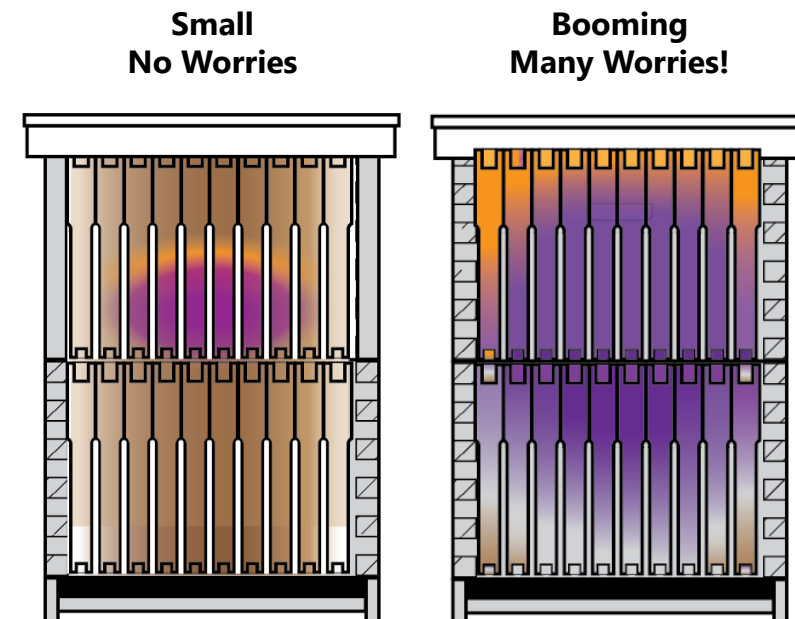
Swarm Management Window

- **For a large colony... Reminder:**
 - **Swarming typically comes some time after drones appear.**
 - This is the timeframe when you must be vigilant
 - Drones signify a time when queens could lay eggs for their replacement **because mating is possible.**
 - **Eggs in a queen cup are a turning point**
 - You have to consider that in window of 21 days queens could emerge to replace your queen – *more on this shortly*



Proactive Assessment

- **During the window you will want to take action if you are in jeopardy of your hive swarming**
 - Look at the colony profile
- **For the hive on the right**
 - Provide more space
 - Relieve Brood Nest Congestion
 - Relieve Storage area Congestion



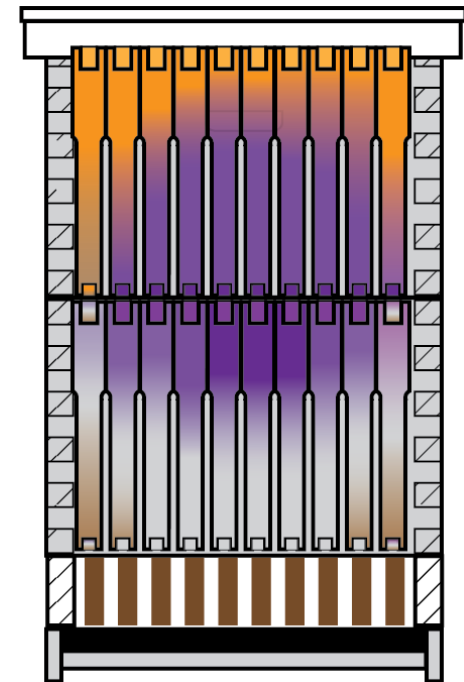


Proactive Mgmt. Slatted Rack

- **Slatted Rack to relieve congestion**
 - Not a commonly employed device
 - Allows extra space in the hive for bees to accumulate and hang out, off of the frames



Image credit: GloryBee.com





Proactive Mgmt. > Do not overfeed

- **Sometimes beekeepers want a good start**
 - Overfeeding causes hoarding and backfilling of the brood area.
 - They get too good of a start, and it can lead to massive populations
 - If you are stimulating the colony in the spring, you best have a plan to cope for success



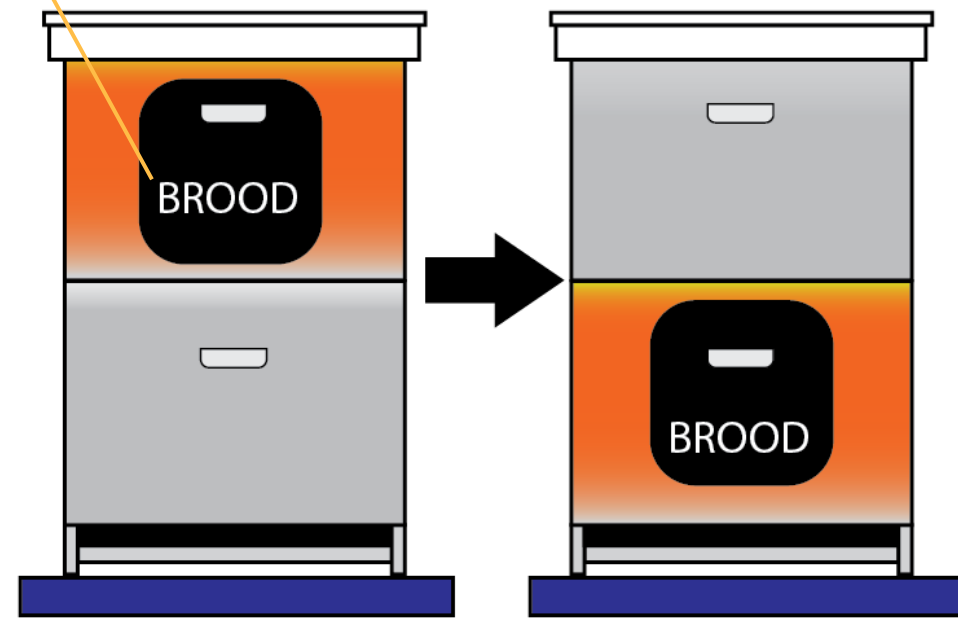


Mgmt. Practice: Spring Colony Reversal

Hive coming out of winter

- **“Bees build up”**
 - There is a common impression that bees build up
 - I think it has merit for describing new hive growth
 - And it gets applied to relieving congestion
 - Hence the technique to do a spring reversal. It aligns with expansion of resources above the brood nest

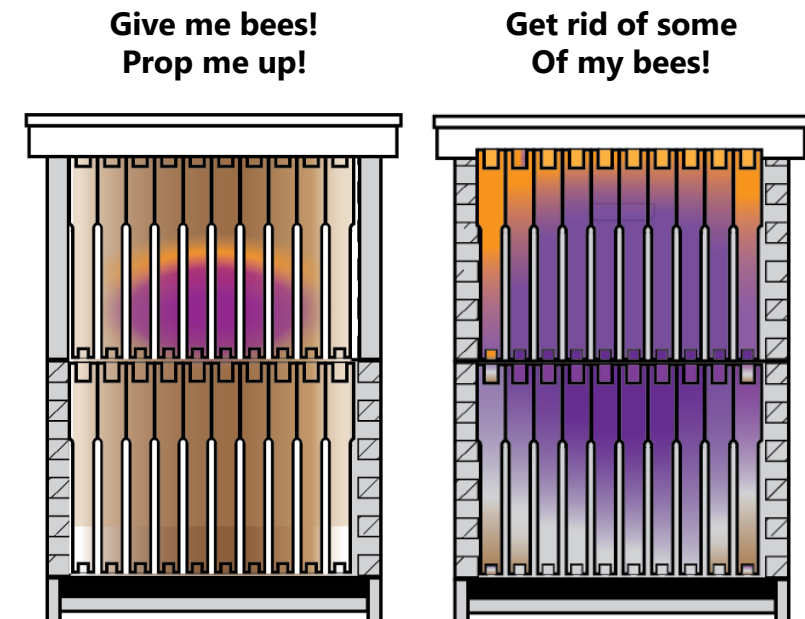
Spring Colony Reversal Method





Mgmt. Practice: Equalization

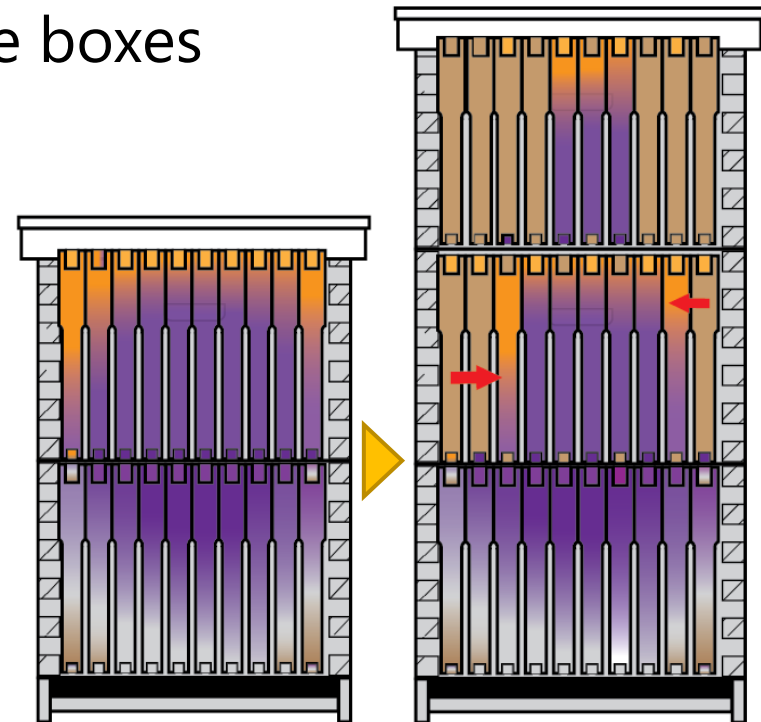
- **You could exchange frames between hives**
 - Prop up the small one while diffusing the big one.
 - Simply swap frames of capped brood
 - Don't take the queen!





Mgmt. Practice: Pyramid Up = (NEST!)

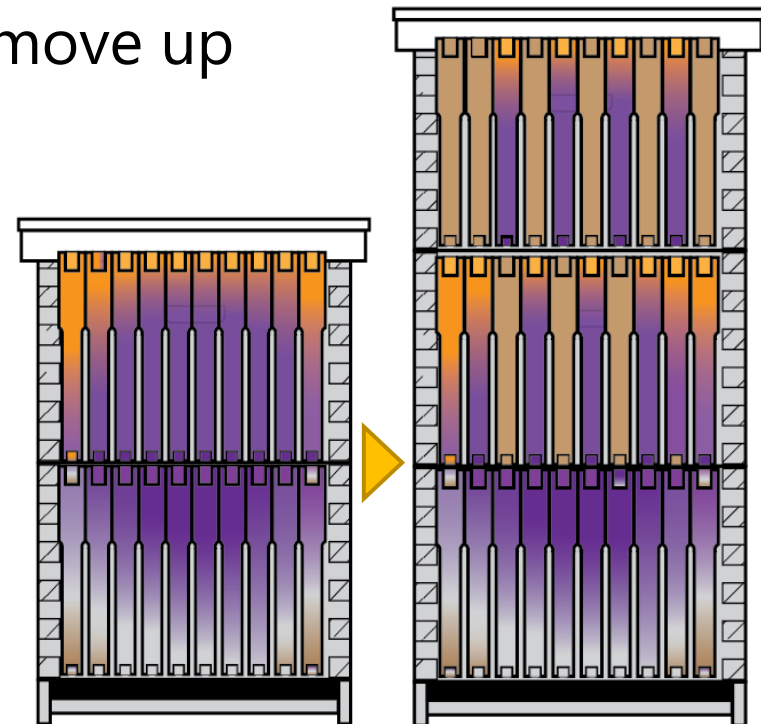
- **Relieve Brood Congestion in the brood nest, Option 1**
 - Congestion relief in the *nest*, and give space for the queen to lay
 - Add a box and move frames into a pyramid shape
 - Room for colony expansion into three boxes





Mgmt. Practice: Expand

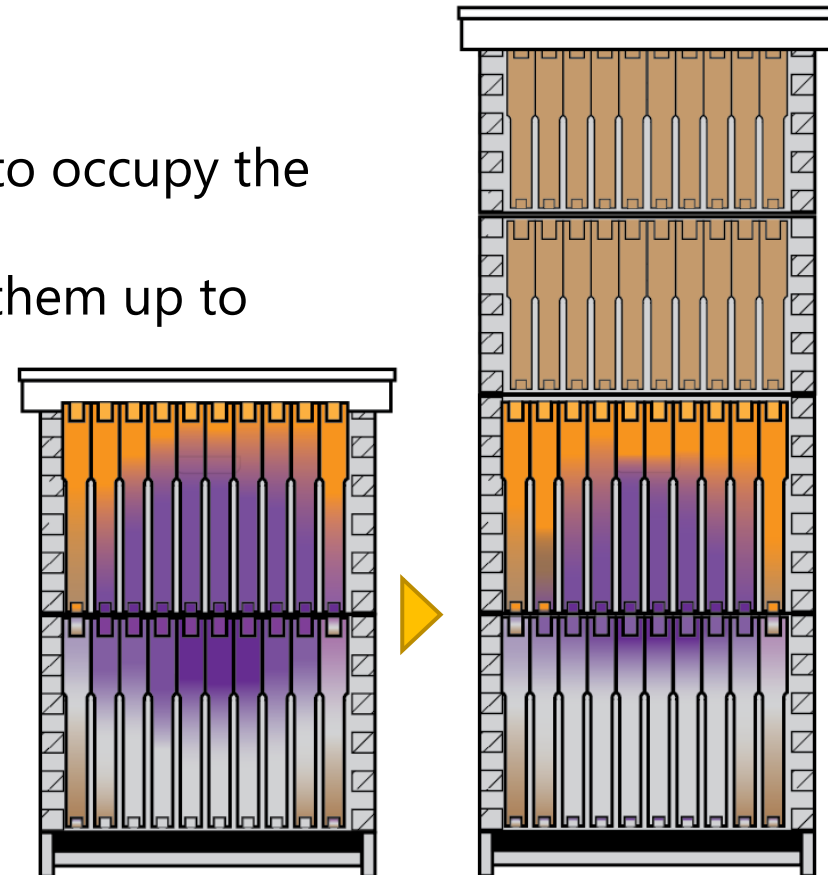
- **Relieve Brood Congestion in the brood nest, Option 2**
 - Another method to relieve congestion
 - Move every other brood frame into the third box
 - Provides a pathway for the bees to move up
 - Use drawn comb if you have it





Mgmt. Practice: More Boxes

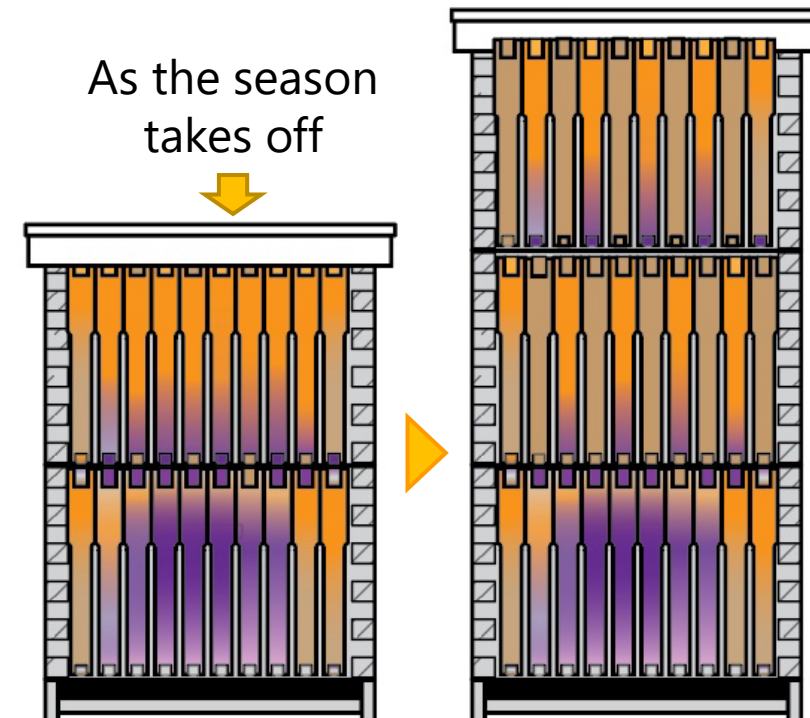
- **Relieve Congestion, in the storage area,**
Option 1
 - Why 2 honey supers? One thought
 - Bees will walk through the lower super to occupy the upper super.
 - The contact with the lower box entices them up to discover the space





Mgmt. Practice: Checkerboarding

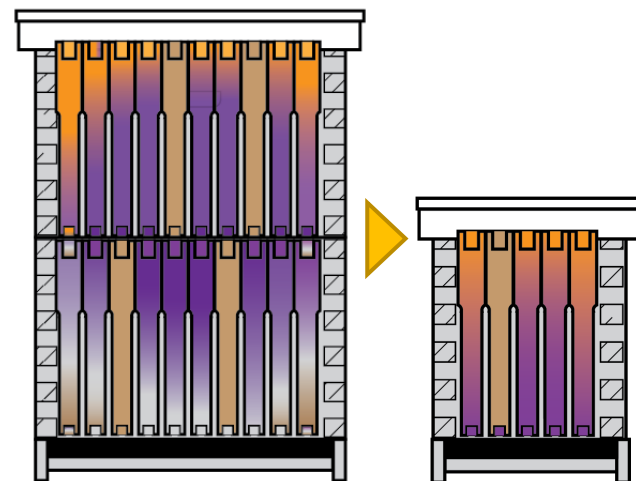
- **Relieve Congestion, in the storage area, Option 2**
 - Open up the **honey dome**
 - With the top box being mostly full, add another box (has to be a full)
 - Move every other honey frame up
 - This gives space for colony to store more food, and serves as enticement
 - Consider an upper entrance





Mgmt. Practice: Perform a SPLIT

- **Split the Hive: Pull four (or 5) frames out**
 - Make a separate Nucleus colony
 - Replace frame removed from the origin colony with drawn comb
 - No Drawn comb? Place all active comb toward the center of the origin hive, and put foundation to the outside.
 - Ok to put one or two foundation frames in the middle of the drawn frames to have the build comb for you and keep them occupied
 - Lessons on splits are upcoming!

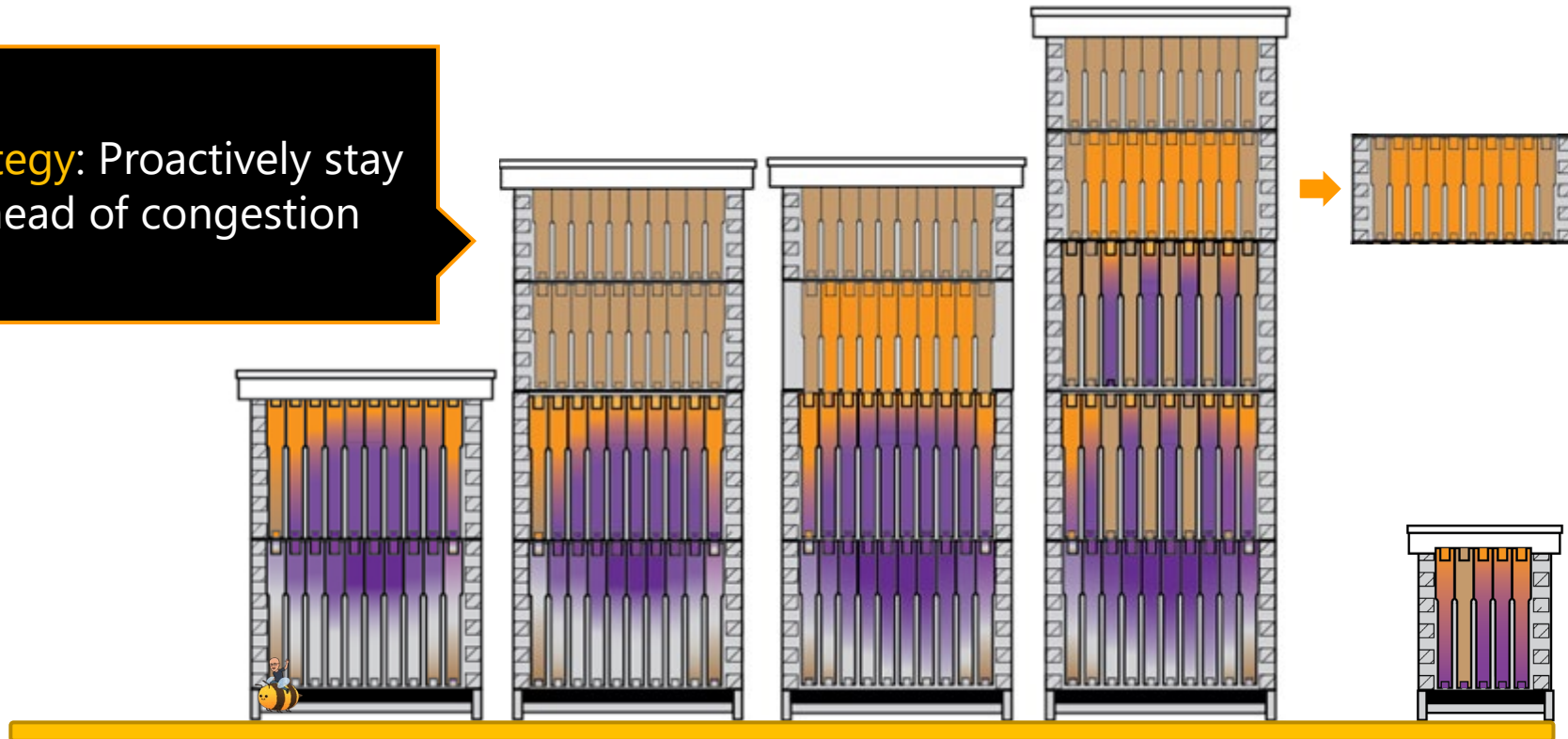




Seasonal Progression for Congestion

- Progress your hives in this way

Strategy: Proactively stay ahead of congestion





- Questions

Q&A





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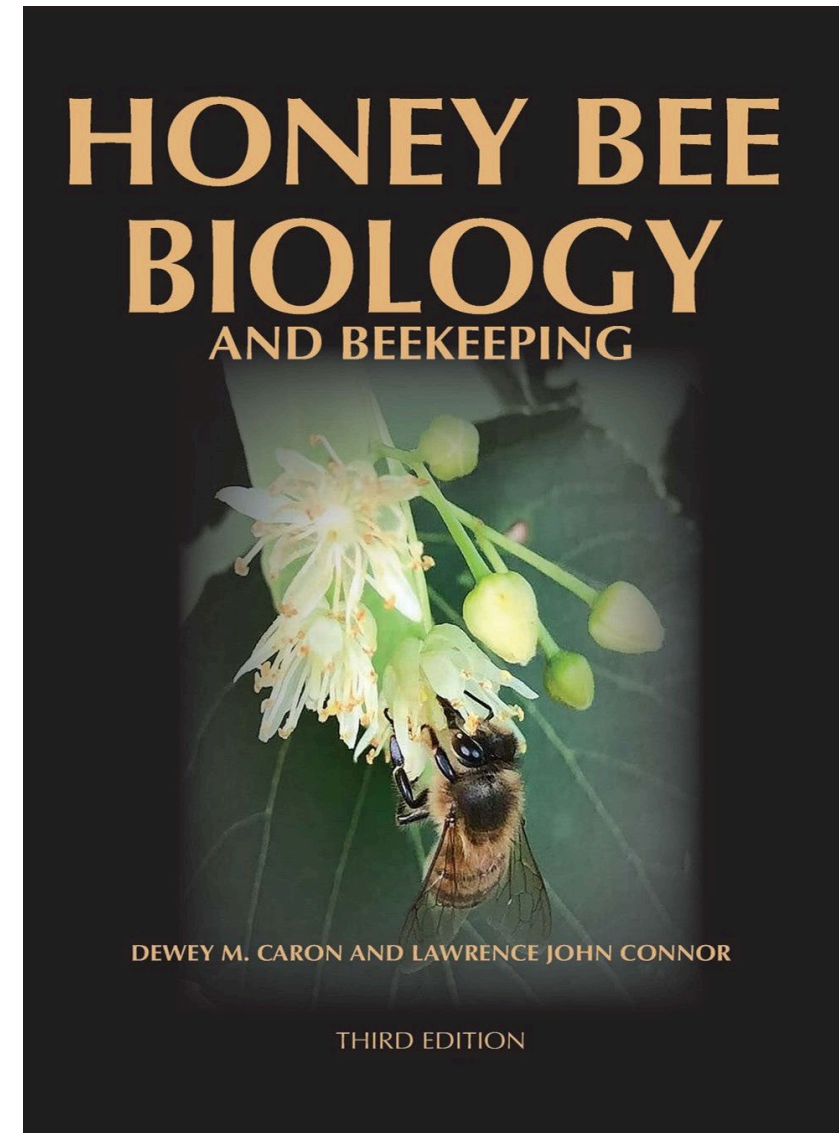
Course Closing

Wrapping Up, Resources and Recommendations





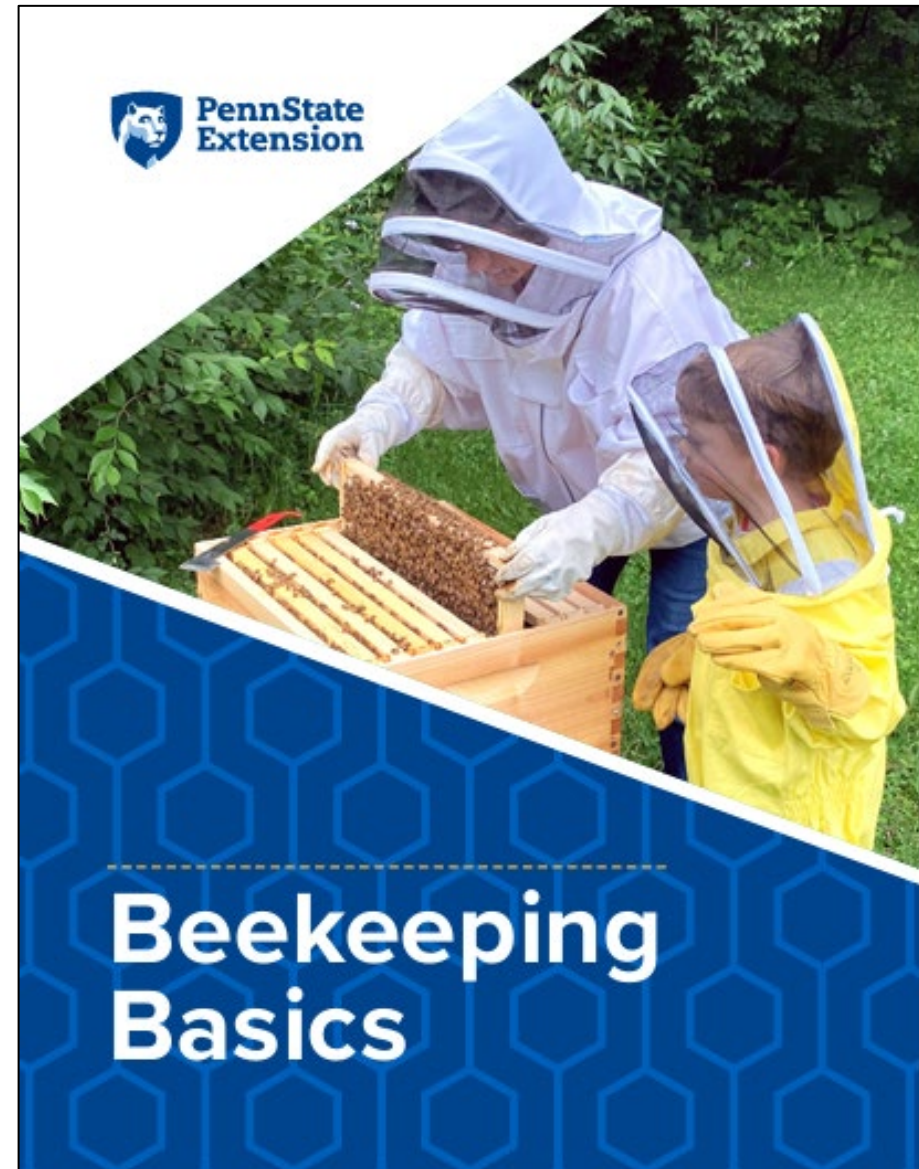
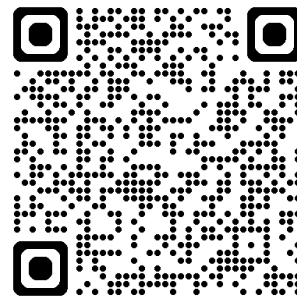
- **Honey Bee Biology and Beekeeping**
 - Dewey Caron, w/ Larry Connor
 - This is a comprehensive book on beekeeping that covers every aspect of the practice
 - It is the analog to a college textbook for beekeeping and highly recommended both to learn and as a reference
 - It is trusted, recently updated, and one of the primary resources Master Beekeepers use to study for their exams





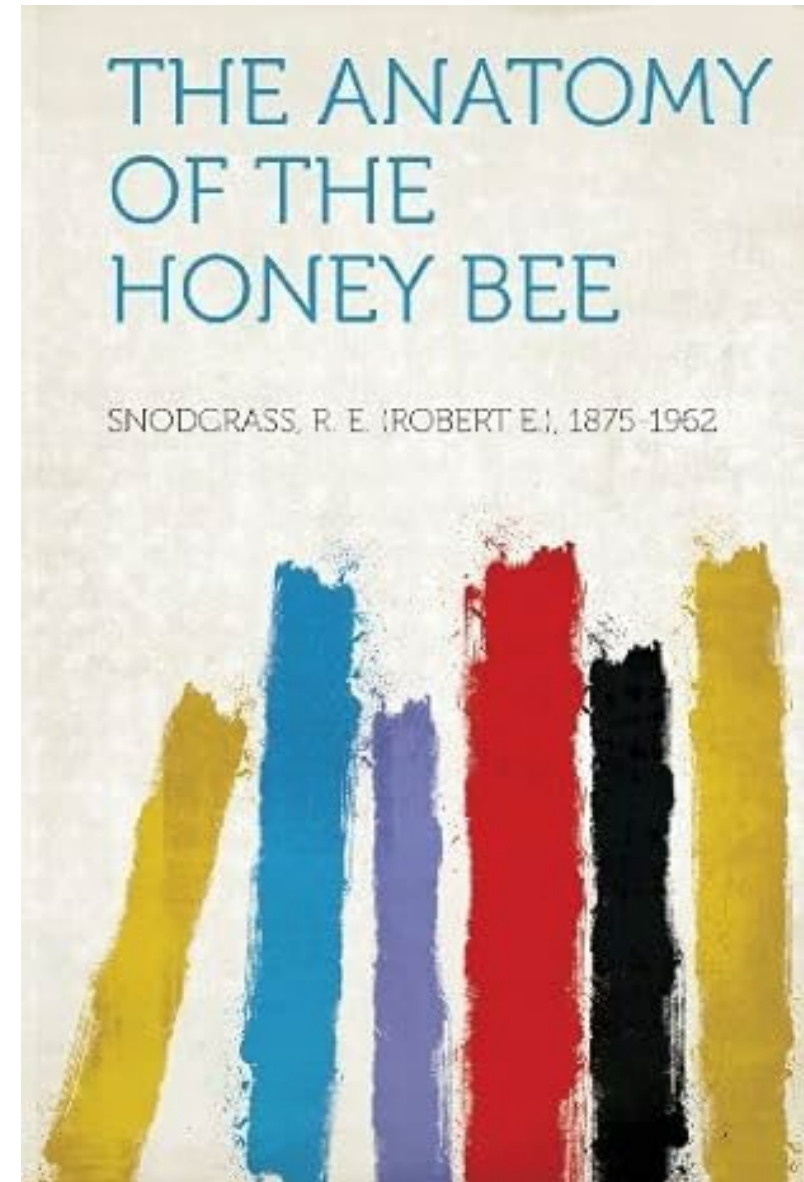
Recommended Reading/References

- **Penn State Beekeeping Basics**
 - One of the best getting started references for beginners
 - Well written and newly revised
 - Kept succinct and relevant to starting in beekeeping
 - Supported with high quality photos throughout and very current





- **The Anatomy of the Honey Bee**
 - Snodgrass, Robert E.
 - This is a pinnacle work when it comes to honeybee anatomy
 - This is a 2013 print – there are many, many reprint variants
 - Even today, researchers and beekeepers rely on the insights, diagrams, and discoveries published by Snodgrass
 - Complicated and detailed, it is hard to read – but when you learn a bit about the craft it unfolds in detail that you will not find (*with the exception of the next recommendation*)



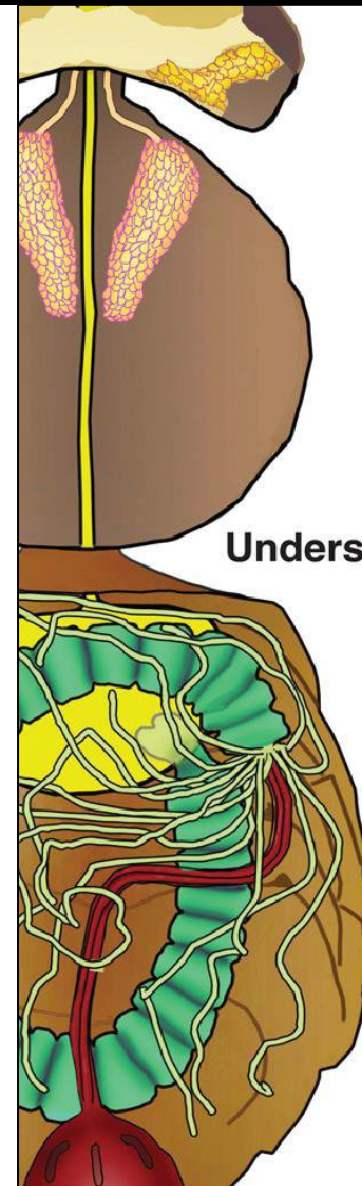


Recommended Reading/References

- **Understanding Bee Anatomy**

- **Stell, Ian**

- This is the modern equivalent of Snodgrass's work with updated understandings
 - It provides a walk through the systems and anatomy of the honey bee with illustrations and is bolstered with amazing photographic images
 - Again, not easy to read, but it is one of the more detailed accountings of honeybee anatomy – all in one place



Understanding Bee Anatomy:
a full colour guide

Ian Stell



Recommended Reading/References

□ Honeybee Democracy

■ Dr. Thomas Seeley

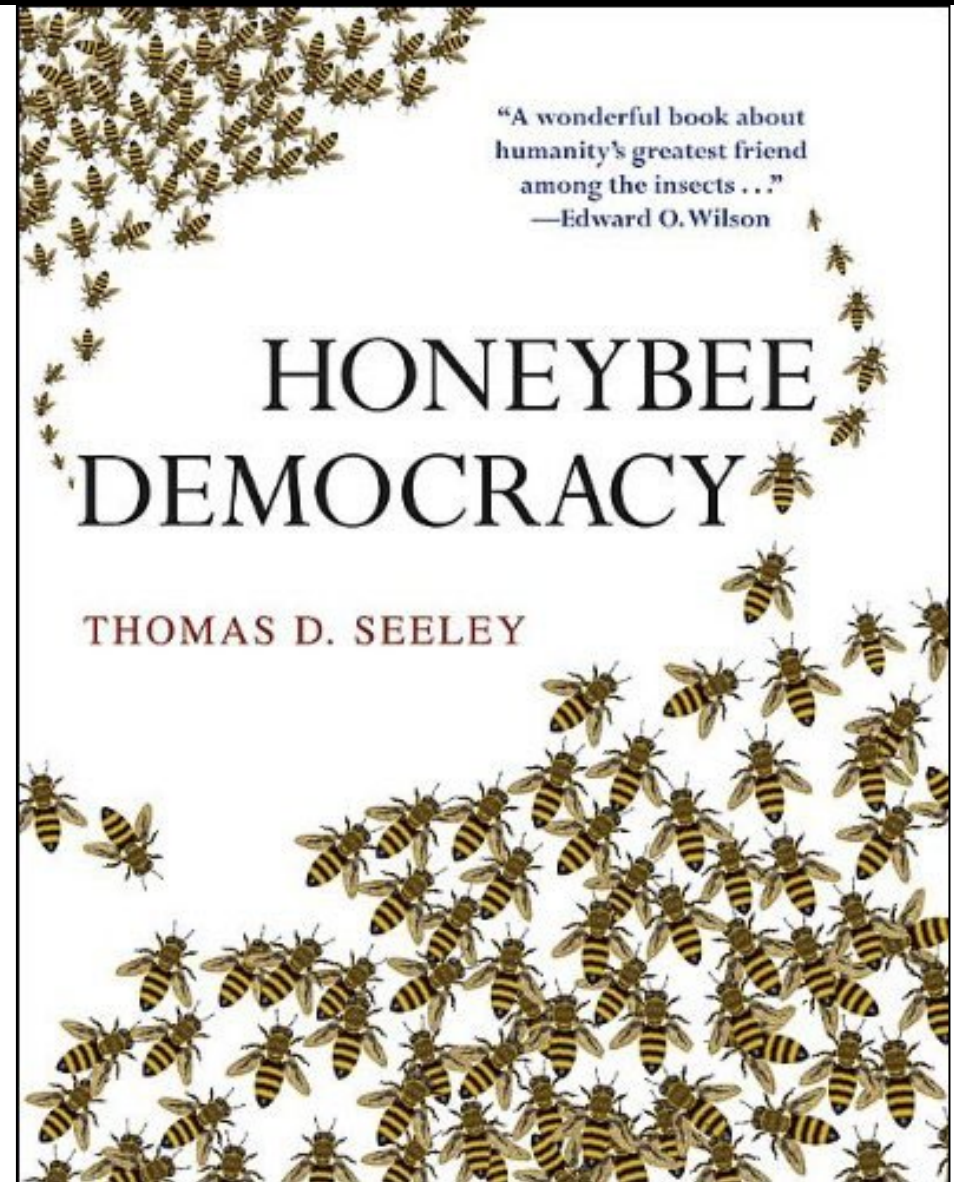
- The modern-day savant on beekeeping, the work of Dr. Seeley is known worldwide
- This is a pivotal work in beekeeping and should be on every beekeeper's bookshelf



AUDIOBOOK

nally, he has several other available that are equally ritive

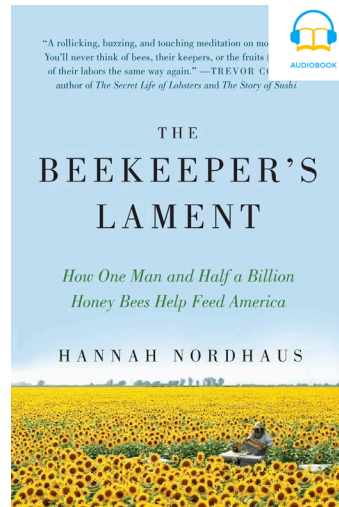
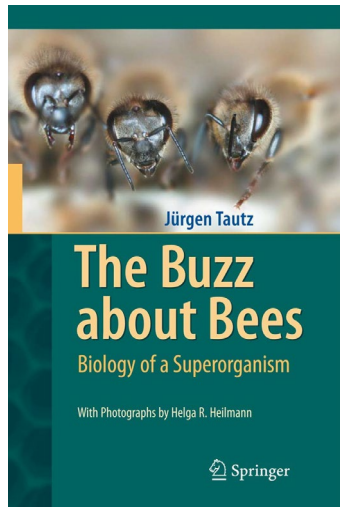
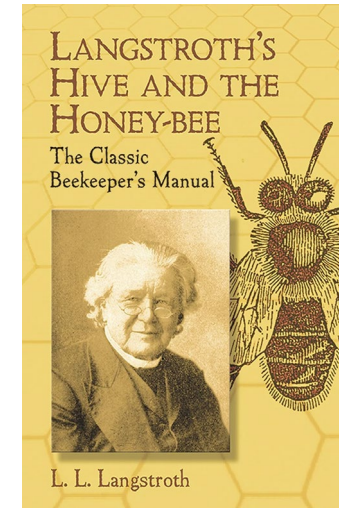
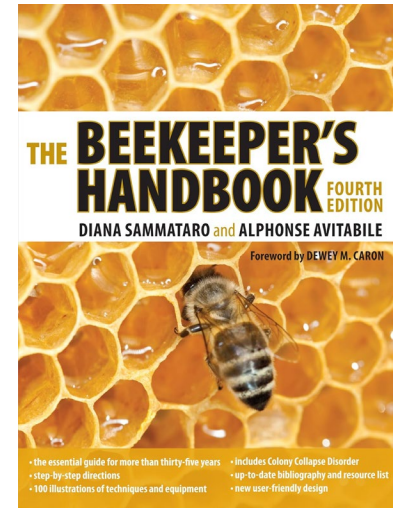
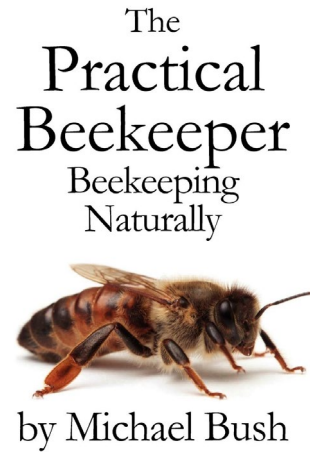
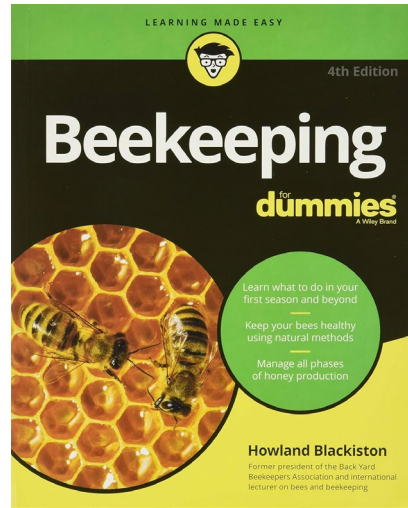
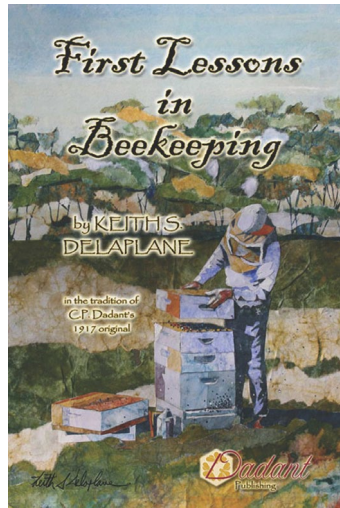
Also available in audio book format







Other Considerations





















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Boston Beekeepers Association

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Thank You

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Managed Mentoring | Beekeepers Corner Podcast

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*Like our beloved bees, when beekeepers go together,
They can accomplish great things.*