

Spring and Summer in the Bee Yard

Goals and First Steps

Feeding Bees

Inspecting Bees

Adding Space

Swarms

Harvest Time

Mites

Dearth



Last Time: Equipment & Bees

- The types of gear you will be buying (lecture and hands-on!):
 - ✓ Woodenware
 - ✓ Tools
 - ✓ Protective Gear
 - ✓ Equipment you can borrow
- Types of Hives
- Buying Bees
- Buying Queens
- Go Local!
- Choosing the bees for you



Overview

The work of the beekeeper in the Spring

- Feeding Bees
- How to Inspect a Hive
- Adding Supers
- Next year: swarm prevention and control

The work of the beekeeper in the Summer

- Counting mites
- Choosing treatments
- Dearth and Robbing
- Next year: harvesting



Imagine At This Point...



- Your package is installed (Session 6)
- Your queen has been accepted
- You're still feeding and they are still eating
- The colony is living hand to mouth... everything they collect goes into wax, or raising young
- 3 days of rain and they could starve!
- Bees are flying every day they can
- It's time for routine inspections to begin and time to start planning for harvest



This Is Not The Year of "Hands Off"

As beekeeper, you need to develop **your understanding** of what your bees need, when they need it around here, and how conditions affect them: get experience!

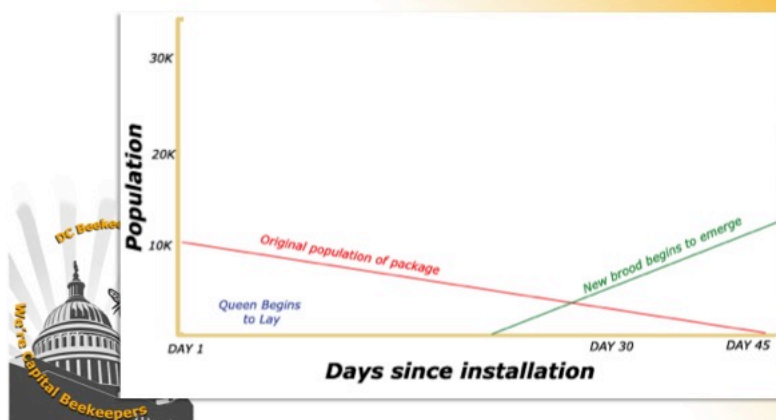
Your **bees are short handed**, in an unfamiliar environment, with **life threatening challenges** this season: help them!

IPM and "survivor stock" require advanced skills, insight



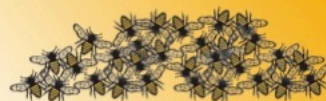
About Package Bees in Particular

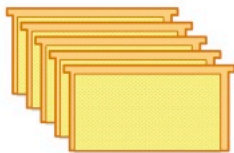
The population of bees in your new hive will **decrease** gradually until new bees emerge from cells to replace the bees which die. It takes 21 days to make a worker bee, and there isn't even comb yet!



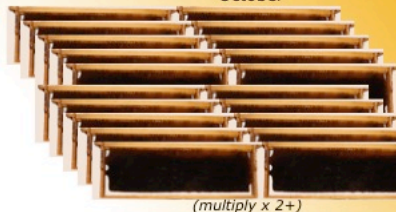
To Help You Visualize


You will start with 6-15,000 bees


You need 25-50,000 by late October



You will have 0-5 drawn frame in Spring



(multiply x 2+)

You will need 30-50 completely drawn frames




You will have no honey stores



You want 75 pounds by Fall

First Year Goals

Draw enough comb (takes 8x as much nectar as honey)

Raise enough brood (start with 10K, winter with 35-50K)

Store 60-75+ lbs of honey once comb available and brood raised

How to accomplish

Feed both carbs and protein

Learn how to inspect, understand what you see

Talk with mentor, community about their observation

Add space when necessary/prevent swarming

Take action against disease, pest problem

Configure woodenware to protect newer, weaker colony (entrances, robbing)



Feeder Options: Lots

Entrance: Please don't (water OK)

Division Board/Internal: takes space, holds not much, drowning, must open

Hive top: Easy in and out, holds lots, drowning and robbing risk

Baggies: Cheap, no drowning, shim, easy in and out, doesn't hold much, generates plastic

Pail/top of inner cover: easy in and out, no drowning, cheap, may hold lots, needs extra box, risk of burr comb





Let's Examine Your Colony

BEFORE YOU
BEGIN, HAVE A
PLAN: WHAT ARE
YOU LOOKING
FOR?

What are Colony Conditions?



The big questions, every time:

- Is the queen OK?
- Is brood present? Bees?
- Do they have enough food (both nectar and pollen)?

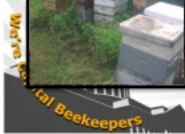
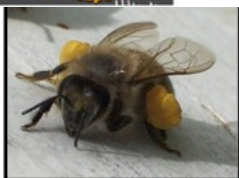
To get an answer, you need to recognize:

- Eggs
- Uncapped & capped brood
- Worker vs. drone vs. queen cells
- Nectar stores
- Pollen stores
- Capped honey



*To know if you are OK, you must learn what is
normal for each time in the season*

First...The Front Door





- Learn To Listen
- Learn To Watch
- Learn To Smell
- A Mindful Moment



Even Where You Stand Makes A Difference.

Smoke and wind...
Shadow...
Flight pattern...
Lifting and moving supers...
Setting Frames...
Sun at your back...

Getting Into Your Colony



1: A Puff in the front door, wait a minute



2: Slowly remove the Lid...quietly



3: A puff under the inner cover. Wait a minute



4: Remove inner cover quietly, waft a bit over frames



7: Gently move the next frame into that empty spot so it isn't touching and lift



6: Slide the next frame into that empty space and leave it there



5: Remove an empty frame to the outside of the box



- **Examining A Frame**
- Start by lifting it out of the box holding it by the "ears," top bar up, *with the sun over your shoulder*, holding the frame over the hive. **ALWAYS.**
- Examine that side first: develop a scanning technique so you always look at a frame the same way and see everything.
- **Then....**



Holding by the ears, slowly rotate the frame 180° so the bottom bar is up. Keep the frame over the hive **ALWAYS.**

Scan the same way. Replace the frame in the box so it will be in the same order and facing the same way that it was. Keep frames organized. Do not scrape or gouge the comb, and do not mash bees. If there's not enough room, **STOP** and make room.

Don't Let Robbing Start



So what were you looking for? Remember Your Plan



- Things that have gone wrong
- Things going right

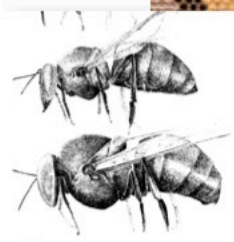
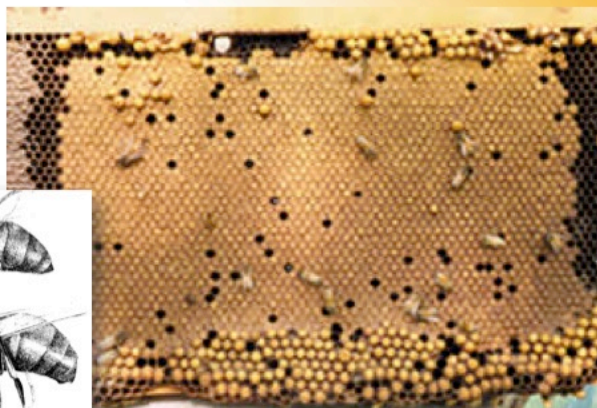


Looking For:

- **Brood:** eggs, open brood, and sealed brood, and about how much
- **Pollen:** the Brood's Food
- **Honey**
- **Population:** Right Number of Workers and Drones
- **Not the Queen:** (Usually) Evidence of her work



Capped Worker and Drone Brood



Drones on the edges, or in damaged areas: junk real estate for boys!

Close up: Eggs, Larva, Capped Brood



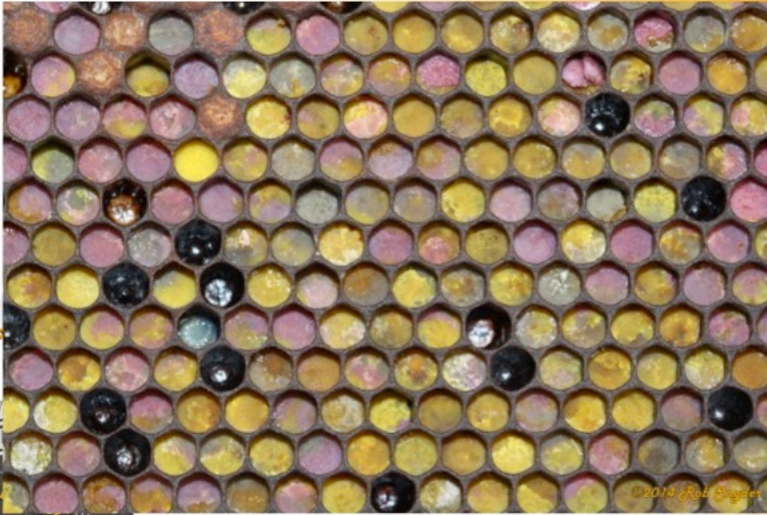
Frame with Sealed and Open Brood



Full Frame of Capped Worker Brood



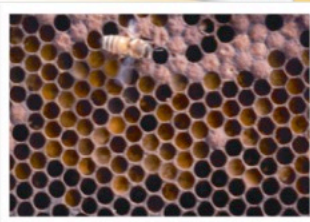
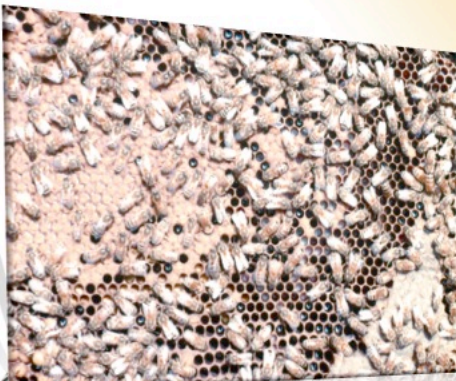
Pollen



Medium Frame of Capped Honey



However, this is what you normally see, everything on a frame! Bees, brood, pollen, honey: they don't make it easy!



"Wagon Wheel" Brood Pattern



Photo Credit Dewey Caron

Why the "Wagon Wheel" is Beautiful

Ring of honey around brood means food is near nurses,
hive is well provisioned, lots of foragers

Brood cappings the color of "pie crust" indicate no disease,
laid at the same time

Few empty cells in middle of brood

Pollen present inside honey, dry and bright (so fresh)

Good "wagon wheel" behavior?

Bees are calm; not running nor defensive

Bees sound content (no roar during manipulation)

Identifiable tasks continue to be performed



Trophylaxis



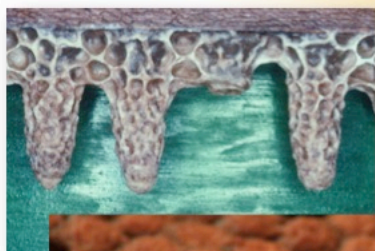
Fix This Now, Or It Only Gets Worse. Remember Bee Space



Put It Back Together The Same Way You Found It it...



- Wait a minute...
- Something's going on here you need to be aware of....
- It's back to biology again...



QUEEN
An egg –
3 days
A larva –
5½ days
A pupa –
7½ days

**16 Days
Total**



Brood **MUST** be Stunningly White in Color: Any off color (tan, yellow, brown, gray) means trouble!



WORKER
An egg – 3 days
A larva – 6 days
A pupa – 12 days

21 Days Total

DRONE
An egg – 3 days
A larva – 6½ days
A pupa – 14½ days

24 Days Total

- A worker Egg is An Egg For 3 Days
- A worker Larva is A Larva For 6 Days
- A worker Pupa is A Pupa for 12 Days

- The ratio of worker *eggs* to *open* to *sealed* brood should be, in a healthy colony in the summer:

• **1:2:4**

• **If It's not, why Not?**

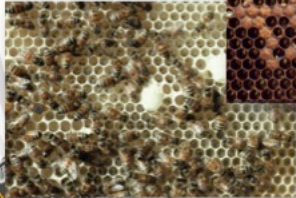
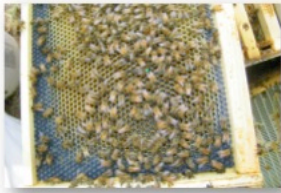




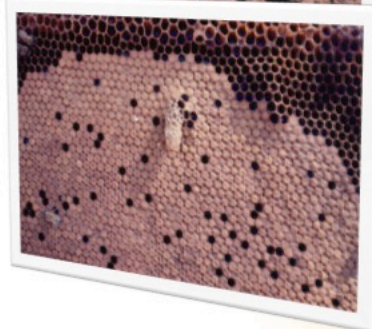
You are looking for
That Balance, That
Ratio of Eggs,
Open and Sealed
Brood



Queen Check. Is She Doing Her Job?



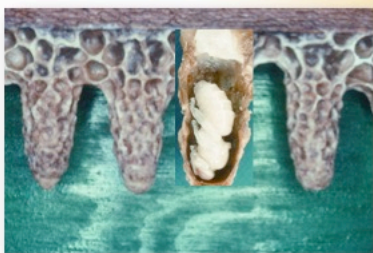
**What
else...Swarm
Cells, or
Supercedure
Cells**



The Queen Is Dead, Long Live The Queen – When The Bees Make Their Own

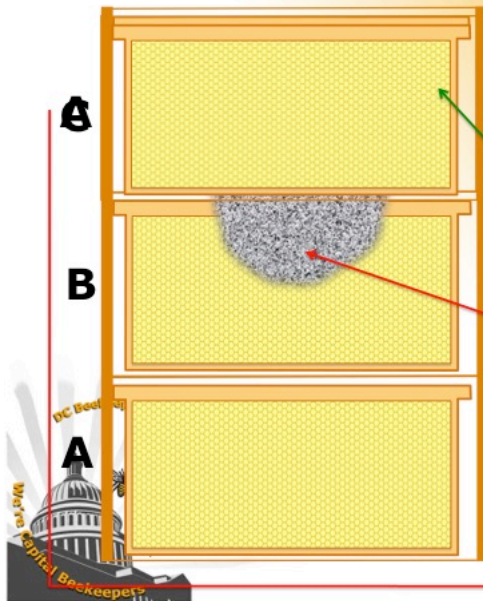


Winner Take All



And there's
lots to take...





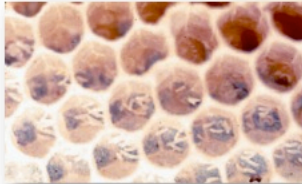
Preventing a Swarm

Have another box ready (with comb is even better!)

Ample Stores

Long been a Common practice

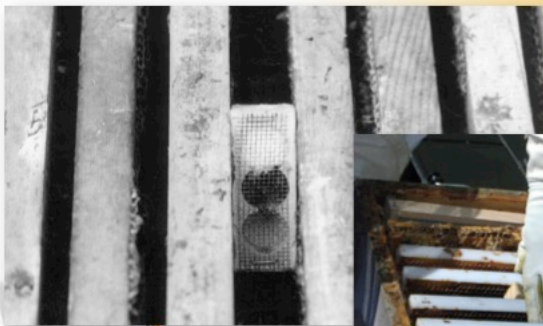
"Reversing"



What Else? Drone Layer, or Laying Workers



REQUEEN, REQUEEN, AND HOPE



What to Look For When You Inspect in April/May

Rapid population build-up
Comb being drawn
Signs of swarming!
If there are Queen cells, what kind?
Beginning of Nectar Flow
Take baseline mite count

Goals

Take advantage of young bees, abundant forage to encourage comb building
Provide adequate room for growing colony/Add supers as necessary
Assess queen viability
Plan for treatment, possible harvest



What to Expect by Mid-Summer June/July

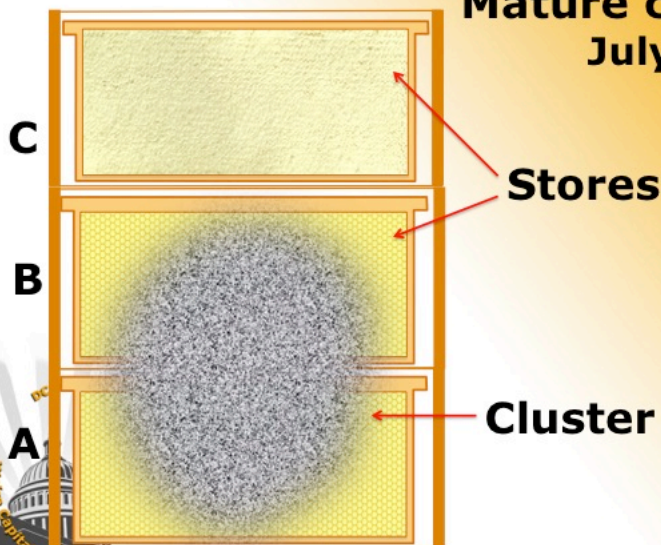
Nectar flow slows dramatically or just stops
Comb building slows or stops
Colony scouting & guarding increase
Mite levels rising
Possible honey surplus

Beekeeper can:

Observe forage availability
Compare findings with mentor, others
Keep inspections to minimum duration
Prepare to harvest honey, if any



Mature colony July



Then it gets really hot

Hard to promote:

Continued brood rearing and drawing comb
Why? Typical drought, reduction of forage
Threat of supersedure and/or queen loss
(especially packages)

What can you do?

If you have comb, add additional boxes,
foundation as necessary

Keep feeding, but carefully

Always look for eggs

Watch for queen cells



Other Problems May Arise

Do you see deformed wings? Mites and virus peaking!
Gray larvae: brood disease, but which one?
Diarrhea inside the hive (Nosema)
Absence of eggs/larvae
Small Hive Beetle
Vandalism?
Evidence of mammalian pests (skunk cuds)
"Hot" bees



Varroa Mite Population Can Overtake Bees

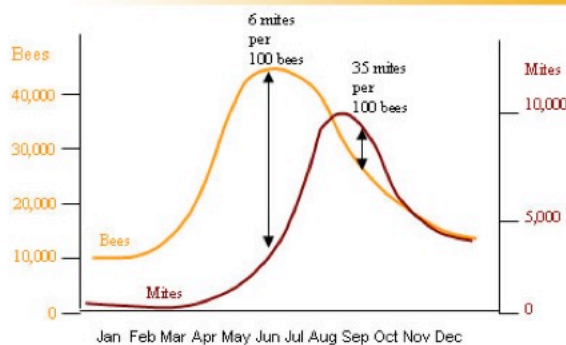


Figure 1. Simplified bee and mite population growth curves for a temperate climate. The mite growth curve lags behind the bee curve. Note how the number of mites per hundred bees greatly increases in fall. A colony is unlikely to survive a fall infestation rate this high.



How to Manage in Late Season?

- Continue to monitor mites
- Select a treatment (very likely in city)
- Do not add empty foundation
- Quick, purposeful inspections, if any
- Use hive drapes, side boxes (reduce bee flight)
- Place robbing screens



August is When Winter Begins

The fall of your first year is the beginning of your second beekeeping year

Calendar year: January-December

Beekeeping year: August-July

Most experts now agree (Flottum, Davis, Oliver, Craft, vanEngelsdorp, etc.):

Your choices in late summer are critical to whether a colony survives Winter, and is strong enough to thrive in Spring.



"Next Time: Fall and Winter"

- "Take Care of the Bees Who Take Care of the Bees That Survive the Winter"
- Knowing the Enemy
- Feeding for Winter
- Configuring Hives for Winter
- First Steps: Early August to Early September
- September: Last Chances
- Late September to October: Ventilation!
- January-February: Checking In
- Other tasks



