The Managed Mentoring Program on getting started in beekeeping.

Managed Mentoring

We See You!

Managed Mentoring

Photo Collage of Beekeeping Visuals

Lesson | Things you will see (Part 1)

What is Covered in this Module

- Bees: Workers, Drones, Queens, New Bees
- Honeycomb Constructs
- Worker and Drone Comb
- Honey Storage Comb
- Queen Cups and Cells
- Resource Handling and Storage: Pollen, Nectar, and Honey

Things you may see

Common hive environment and colony observations

Things you might see…

Workers

Worker Bees

- *Primary bee in the hive*
- *Shades of color*
  - Colors vary by race
- *Size and Shapes vary*
  - Dimensions and shapes vary from race to race.

Location

- *Throughout the hive. They are often looking to rest (hang out) or feed*
- *Often found in the periphery of the brood nest so they can seek food*
  - Will be found in the outskirts during quiet times

Behavior

- *Often leave the hives in the early morning for mating*
- *Will come and go a few times during the day*

Drones

Drones

- *Large Barrel Shape*
- *Large Eyes*
- *Blunt Abdomen Shape*
- *Appear in abundance in early spring to mid summer*
- *Kicked out of the hive in fall*

Location

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- *Often found in the periphery of the brood nest so they can seek food*
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Behavior

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Queen

Queen

- *Long Abdomen and prominent thorax*
  - Thorax may or may not be painted like this image
- *Abdomen protrudes*
- *Often moves in a distinct way given her length*

Location

- *Throughout the hive but mostly in the brood chamber*
- *Mostly in the area with Nurse bees*
- *Can be anywhere in the hive space*

Behavior

- *Normal duty for a queen is to lay eggs all spring*
- *Typically found going from cell to cell laying eggs on brood comb*
- *Will sometimes flee to cover when hive is opened*

New Bees

New Bees

- *Pale appearance – downy fur*
- *Light cream color abdomen*
- *May look wet or have an albino appearance in early hours*
- *Hairs may have a matted appearance*

Location

- *Found in the brood nest*
- *Will be located around the area of comb that contains capped brood*

Behavior

- *Often found walking on comb – interacting with workers for food*
- *Common behavior is to clean the cell they emerged from as a first activity*

Honeycomb

Honeycomb

- *Honeycomb has a mid-rib with cells facing both directions off the mid-rib.*
  - Bees build comb progressively downward by hanging from each other via festooning.
  - The cells slope slightly upward at an angle approximately 13°.
  - Bees provide for an extra ring of wax, reinforced by propolis, on the ends of the comb. This aids in walking on the comb.
  - Holes are sometimes created by the bees to move though the comb
    - This negates the need for bees to traverse comb to move around.

Honeycomb

- *Serves as the substrate for all of the activities in the hive*
  - Rearing Workers
  - Rearing Drones
  - Storage Vessel
  - Maintaining Atmosphere

Worker Comb

Worker Comb

- *Worker comb is initially light ivory-gold in color*
- *In time it turns to a tannish-brown color and deepens to a mahogany brown with age*

Location

- *Throughout the hive, and of course where the queen lays an egg*
- *Often centered in the lower two boxes in a conventional setup*

Worker Comb

- *Wherever the queen lays an egg, is where worker comb can be found.*
  - Any normal cell can become worker comb.
    - Including comb in honey supers

Capped Worker Comb

- **Worker Comb/ Brood**
  - *Smaller sized cells (in contrast to drone comb)*
  - *Capped comb is covered with paper bag colored wax capping*
    - Color varies based on the age of the colony
      - New colonies are often have straw-colored wax

- **Location**
  - *Found in the brood nest*
  - *Will be in the center of the nest*
    - Mostly in the middle of the bottom boxes, sometimes off to the sides
    - Covered with Nurse Bees

- **Worker Comb**
  - *More abundant in the spring and during the nectar flow*
  - *Will be present in some form at almost all times*
    - Should be uniform in appearance and proximity; no spotty distribution

Drone Comb

- **Drone Comb**
  - *Specially enlarged cells*
    - Workers will purpose build it for drones or enlarge existing comb
    - Can be transformed for nectar and honey storage if bees prefer

- **Location**
  - *Can be anywhere in the hive, but often is found in the periphery*
  - *May be built in the margins*
    - Sometimes build under frame bars or over the top bars

- **Drone Comb**
  - *Larger dimension to accommodate the size of drones.*
  - *Capped with a domed cover*

Capped Drone Comb

- **Capped Drone Comb**
  - *Bullet shaped domes*
  - *Built over larger dimension cells which accommodate the growth of the drones*

- **Location**
  - *Found in the brood nest*
  - *Will be around the periphery of the nest.*
    - Could be built in the margins, on top of frames, off the bottom of frams.

- **Drone Comb**
  - *Prevalent at the time of nectar flow onset*
  - *Built during mating seasons; typically spring and early summer*

Emerging Brood Comb Areas

- **Emerging Brood**
  - *Developing bees will emerge from their cocoons by chewing threw the wax cappings*
  - *They often exhibit a pattern of 'center-out'*

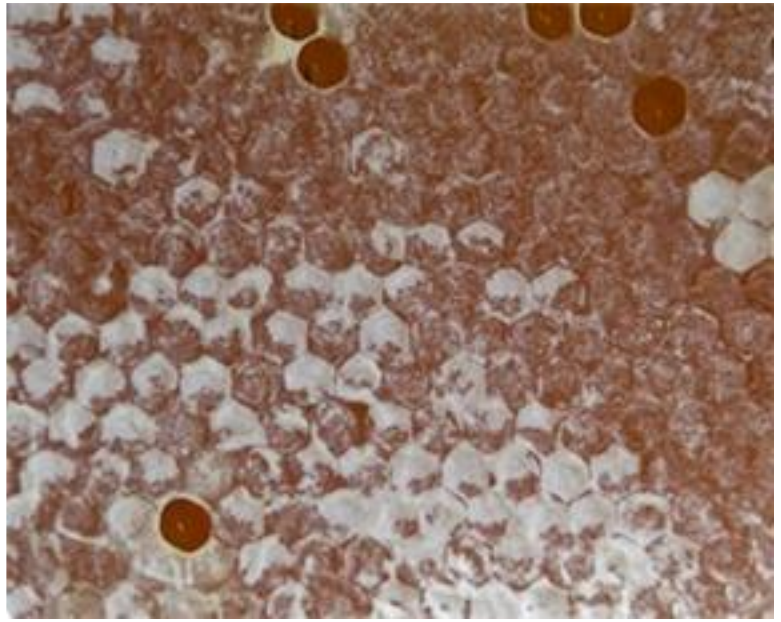
- **Location**
  - *Center of the nest*

- **Emerging Brood**
  - *Logically accompanied by new young bees*
  - *Typical for bees to start preparing the center section for the queen to lay new eggs*

Capped Honey

Capped Honey

- *Honey sealed in the cell, capped over by a wax coating.*
- *May look different depending on how it is prepared by the bees*
  - Wet Capping
    - This is a capping where they honey under the cell comes into contact with the wax, creating a dark liquid look under the capping
  - Dry Capping
    - The capping maintains a bit of air space under the wax and displays as a white wax over the capped honey



Capped Honey

- *Freshly covered honey has a new wax appearance.*
  - The appearance will change with age and when bees walk over the surface.

Queen Cups

Queen Cups

- *Queen cups are the precursor to bees building queen cells*
- *They are a shallow cup that is sometimes bowl shaped and other times more formed like the image shown here*

Location

- *Can be found throughout the frames in the brood nest*
- *Often built in the outer edges in the frames or anywhere vertical surfaces develop in the comb (holes for example)*

Queen Cups

- *Very typical in every hive*
- *Not indicative of queen problems. Bees just build them to have them*
- *They are cups when they are not 'charged' with an egg*

Queen Cells

- **Queen Cells**
  - *Vertical wax pinky shaped queen cells*
  - *Typically have a mottled appearance (Mr. Peanut texture)*
  - *Start out as queen cups; enlarged once queen is being reared by the bees*

- **Location**
  - *Often found in the periphery of a frame*
  - *Lower edges, or outside*
  - *Especially where holes are developed in the comb from the bees for passage ways*
  - *Sometimes on comb face*

- **Queen Cells**
  - *Swarm Cell: Cell in preparation for Swarming*
  - *Supercedure: Cell for queen replacement (Something wrong)*
  - *Emergency: Cell created when queen is no longer present*

Open Queen Cells

- **Open Queen Cells**
  - *Queen cell with the end chewed off and open*
  - *This signifies that the queen has emerged and is in the hive somewhere*

- **Location**
  - *Often found in the periphery of a frame, lower edges, or outside*
  - *Especially where holes are developed in the comb from the bees for passageways*
  - *Sometimes on comb face*

- **Open Queen Cells**
  - *Open queen cells indicate that a queen has emerged*
  - *Sometimes they even have the end flap present*

Pollen

- **Pollen**
  - *Multi-color granules packed into cells*
  - *Often coated with a shiny surface (light honey coating)*
  - *Color varies based on plant source*

- **Location**
  - *Typically found in proximity to the brood nest*
  - *Often found in a loop around brood patches*
  - *Frequently stored in bulk (full frame side) alongside the brood nest.*

- **Pollen Stores**
  - *Abundantly gathered in spring, and in fall*
  - *May be scarce in dearth periods*

Nectar Storage

- **Nectar Storage**
  - *Nectar is collected by the foragers*
  - *Light Liquid Deposited in the cells*
  - *Eventually dried by the bees into a thick viscous liquid – appearing like glass >*

- **Location**
  - *Throughout the hive*
  - *Especially on the outer frames*
  - *Is actively dried by the bees and then capped as honey*

- **Nectar (food) Storage**
  - *During forage windows nectar is collected by plants*
  - *When beekeepers feed bees sugar solution it is stored much in the same way as nectar from nature*

Honey Storage Comb

- **Honey Storage Comb**
  - *Begins with placement of nectar.*
  - *Nectar is dried through evaporation of moisture.*
  - *Once dried, out, it is capped*

- **Location**
  - *In the outer spaced beyond the brood chamber*
  - *Can also be in the corners of brood comb and near to bees being reared.*

- **Honey Comb**
  - *Honey over the nest can be called a 'honey dome'*
    - The queen often does not cross over the honey dome to rear bees.
    - This often results in the queen staying out supers

Capped Honey

- **Uncapped /Capped Honey**
  - *Uncapped honey has a glossy, glass appearance*
  - *Capped honey is coated with wax*
    - Wax colors change over time as the bees walk on it
    - Often it is capped with fresh wax and has a light color
    - Sometimes it can be capped with recycled wax that bees repurpose from other places of the hive.

- **Capping Color Transformation**
  - *The capping will darken over time due to the bees walking on it. This is normal*

Closing Comments

- **Customary Close**
  - Where we stand, where we are going…
    - *This lesson covered first half of thing things you will likely see as your hive grows to full grown.*
    - *Please make sure you take the time to watch the partner video on things you will see.*

Q&A

- **What Questions did we not anticipate?**
  - If you have feedback, you can leave a constructive comment; but be nice.
  - You could also send an email to comments@managedmentoring.com
    - *Please refer to this video in the subject so we know what the reference is.*