

BEGINNING BEEKEEPING

CLASS 2: EQUIPMENT, TOOLS, & CLOTHING

LOCATION OF YOUR APIARY

- ✦ Good southeast or east location
- ✦ Easily accessible with good room to work hives
- ✦ Sunshine – all day or most of day (morning and early afternoon sun)
- ✦ Wind break on north side
- ✦ Good water drainage
- ✦ Water for bees somewhere fairly close (does not have to be clean)
- ✦ Know your neighborhood
 - ✦ Is there chemical use nearby (corn, tobacco, mosquito breeding ground)
 - ✦ Are neighbors "allergic" to bees or uncomfortable around them
 - ✦ Do neighbors have swimming pools or hot tubs
 - ✦ What bee friendly foliage is around you
- ✦ Avoid putting hives near farm animals – especially horses
- ✦ If you are in bear country, you will need an electric fence (or if you are putting hive somewhere where it can be compromised)

EQUIPMENT

- ✦ Four types of hives that can be used in NC
- ✦ All have removable frames

EQUIPMENT

- ✦ Langstroth Hive



EQUIPMENT

- ✦ Top Bar Hive (Kenyan or Tanzanian)



EQUIPMENT

- ✦ Warre Hive (a cross between the two)



EQUIPMENT

- ✦ Horizontal or Long Hive



EQUIPMENT

- ✦ Most commonly used hive today is the Langstroth
- ✦ Can be used as a modified Warre hive



STANDS

- ✦ Optional piece of equipment
- ✦ Elevates the bottom board (floor) of the hive off the ground
- ✦ Reduces dampness in the hive
- ✦ Extends the life of the bottom board
- ✦ Helps keep the front entrance free of grass and weeds
- ✦ Helps keep predators (skunks) away.

STANDS



4 x 4's and cinder blocks



Cinder blocks

STAND WITH LEGS



SOME REASONS TO GET BEES OFF THE GROUND



HIVE STAND? LANDING BASE?

- ✦ Sometimes listed as hive stand in bee supply catalogs
- ✦ Provides bigger landing base for forager bees
- ✦ There are some combination elevated stands with large landing bases (more custom work)



BOTTOM BOARD



Solid bottom board



Screened bottom board

BOTTOM BOARD

- ✦ Floor of colony
- ✦ Includes takeoff and landing platform
- ✦ Open in the front only
- ✦ Hive should be tilted slightly forward to prevent rainwater from running into the hive
- ✦ Can be solid bottom or screened bottom (IPM)
- ✦ Entrance reducer added to opening

OTHER EQUIPMENT – ENTRANCE REDUCER



BROOD NEST ORGANIZATION

- * Brood in center – eggs, larvae, pupae
- * Then bee bread and pollen
- * Then nectar
- * Capped honey on outside and top (creates honey barrier queen usually won't cross)



HIVE BODY (WITH FRAMES)



HIVE BODY

- * Standard size boxes that hold the frames that the bees build on
- * Referred to based on their use. If used as the brood chamber, then called brood box. If used to collect honey, called a honey super.
- * Traditionally, brood boxes were all deep hive bodies and honey supers were all shallow hive bodies.

HIVE BODY

- * Currently 3 sizes of depth
 - + Deep - 9 5/8 inches high
 - + Medium - 6 5/8 inches high
 - + Shallow - 5 1/8 inches high
- * Also, 3 widths
 - + 5 frame (nuc)
 - + 8 frame
 - + 10 frame (traditional)

FRAMES



All frames are the same width. You decide about depth.



END BAR OF FRAME

- ✦ Has shoulders to help ensure correct bee space between adjacent frames and side of the box
- ✦ Depth for hive body size
- ✦ Holes for stabilizing wire, pins, etc.



FOUNDATION AND COMB BUILDING

- ✦ Lots of choices
 - ✦ Buy foundation that is imprinted with cell structure – wax, wired wax, plastic with wax coating, plastic
 - ✦ Give bees a starter strip of wax or paint stick coated with wax and let them build on their own
- ✦ The kind of foundation you choose will affect the kind of frames you buy
 - ✦ Wedge or grooved top bar (default wedge)
 - ✦ Groove or split bottom bar (default split)

TOP & BOTTOM BAR OPTIONS



Groove top and bottom



Wedge top and split bottom



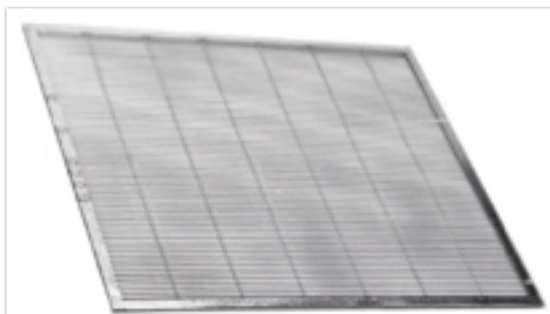
INNER COVER



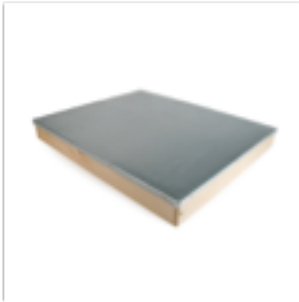
INNER COVER

- * Rests on top of the uppermost super and beneath the outer telescoping cover
- * Prevents the bees from gluing down the outer cover to the super with propolis and wax
- * Provides an air space just under the outer cover for insulation
- * Protects the interior of the hive from the direct rays of the sun
- * Prevents moisture-laden air from directly contacting cold surfaces
- * Provides access for in hive feeder or bee escape

QUEEN EXCLUDER (OPTIONAL)



OUTER COVER (TELESCOPING TOP)



OUTER COVER

- ✦ Protects hive parts from the weather
- ✦ Fits over the inner cover and the top edge of the uppermost hive body
- ✦ Sometimes covered with a sheet of metal to prevent weathering and leaking
- ✦ Removal of the outer cover, with the inner cover in place, disturbs few bees within the hive
- ✦ Allows beekeepers to easily smoke the bees prior to colony manipulation.

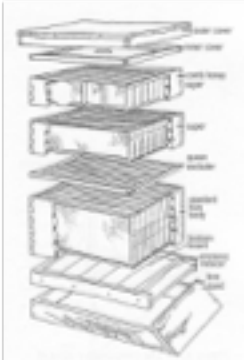
MIGRATORY COVER



MIGRATORY COVER

- ✦ Fit flush with the sides of the hive body
- ✦ No inner cover used
- ✦ May or may not extend over the ends
- ✦ Lightweight and easy to remove
- ✦ Allows colonies to be stacked
- ✦ Tight stacking is important in securing a load of hives on a truck

PUTTING IT ALL TOGETHER



HIVE VENTILATION

Moisture is one of the biggest issues in NC, so good air flow is important.



Many beekeepers raise the top cover 1/8 inch to provide better air circulation so moisture doesn't build up and drip on the bees.

STAND WRAP FOR WINTER



OTHER EQUIPMENT - FEEDERS



SHIM FOR BAGGIE FEEDING



PAINTING THE HIVE

- ✖ You do not have to paint the hive but if you do it will help protect it from weather
 - + Do not paint the inside of the hive
 - + Use a good latex exterior light colored paint

BUYING NEW EQUIPMENT

- ✖ Unassembled when purchased or for \$\$ assembled equipment
- ✖ Assembly directions are usually easy to follow
- ✖ Purchase early for assembly and painting time
- ✖ Do not install sheets of foundations until needed
 - + Storage temperatures and handling cause wax to stretch and warp

USED EQUIPMENT

- ✖ May have problems
- ✖ Know the beekeeper's practices
- ✖ May not have standard dimensions
- ✖ May be contaminated with pathogens that cause various bee diseases



TOP BAR HIVE

✦ Kenyan style - most common



TOP BAR "BARS"



TOP BAR "BARS"



TOP BAR FRAME INSPECTION



TOP BAR FRAME INSPECTION



TOP BAR TRICKS: ATTACHING COMB



WARRE HIVE



WARRE HIVES

PROBLEM: COMB ATTACHED TO SIDES



WARRE HIVE



HORIZONTAL OR LONG HIVES



USES STANDARD LANGSTROTH DEEP FRAMES



HORIZONTAL OR LONG HIVES



HORIZONTAL OR LONG HIVES

- ✦ Layens is the original horizontal hive with extra-deep frames, invented in the 19th century by the famous French beekeeper Georges de Layens.

- ✦ Deeper frames
- ✦ Thicker walls



[HTTPS://HORIZONTALHIVE.COM/](https://horizontalhive.com/)

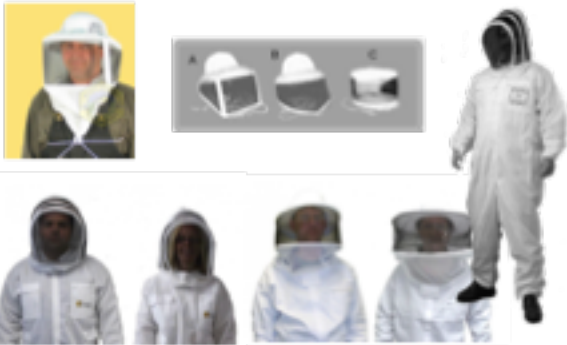
LAYENS HORIZONTAL HIVES



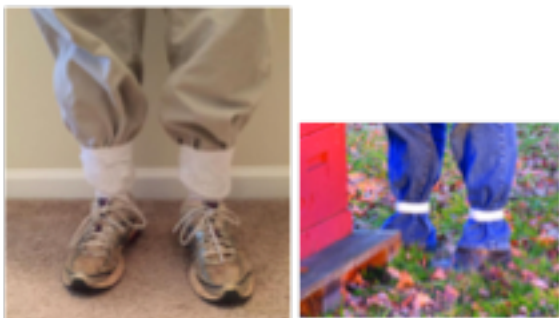
PROTECTIVE CLOTHING

- ✘ White or tan in color
- ✘ Other colors are acceptable BUT
 - + Bees react unfavorably to dark colors, fuzzy materials, and clothing made from animal fiber.
- ✘ Ripstop nylon fabric are excellent for working bees (may be too hot to use in the summer)
- ✘ Tyvek painter suits work great and are inexpensive

PROTECTIVE CLOTHING - SUITS, JACKETS, VEILS



PERSONAL EQUIPMENT - LEGS



PROTECTIVE CLOTHING: GLOVES



Goatskin Gloves



Nitrile Gloves



Canvas gloves



Dollar Store

TOOLS & OTHER EQUIPMENT

✦ Smokers



4" x 7"



4" x 10"

TOOLS AND EQUIPMENT - SMOKER

✦ Smoker fuels

- + Cotton burlap (no synthetic blends), corn cobs, wood shavings, pine needles
- + Cardboard, punk wood, bark, sumac bobs
- + Cotton rags, dry leaves, and bailer twine
- + Liquid smoke



TOOLS AND EQUIPMENT - HIVE TOOL



TOOLS AND EQUIPMENT: MISC.



Bee Brush

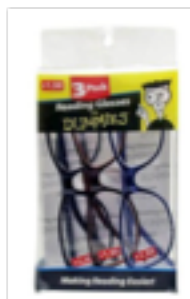


Uncapper: for honey but also good for drone brood

PERSONAL EQUIPMENT - EYES



Sweatband



Magnifying glasses (+3.0 best)

OTHER USEFUL THINGS TO CARRY

- ✦ Water
- ✦ Matches or lighters
- ✦ Baggie with wet cloth for cleaning honey off of hands
- ✦ First aid kit with Benedryl
- ✦ Duct Tape (or Gorilla Tape)
- ✦ Queen cages + miniature marshmallows

WHERE TO BUY?

- ✦ Go to: BumblingBeekeeper.com and check under Resources: Vendors: Suppliers

Week 3: March 7th

- ❖ Questions
- ❖ Races of honey bees
- ❖ Honey bee basic biology
- ❖ Life cycle of the honey bee
