

Introduction to Beekeeping



SIX CLASSROOM SESSIONS & THREE FIELD SESSIONS

What you need to know to keep bees successfully!

This class is presented by



MAINE BEE WELLNESS

Buzzing with the bees in Maine



Tonight's Instructor

The homework for tonight's class was reading chapters 5 & 6 in your text.



With this class we finally get into the details of keeping and managing bees. One thing to remember, with a new colony in the spring, beekeeping is at its easiest.



We start this week with a quiz. The quiz is not to give you a grade for the course, but for us as instructors to see what types of information you're retaining.

QUIZ

Most bee hives are made of wood

That shouldn't be a surprise. Wood is an abundant material in the US.



A modern day Bee Gum in France

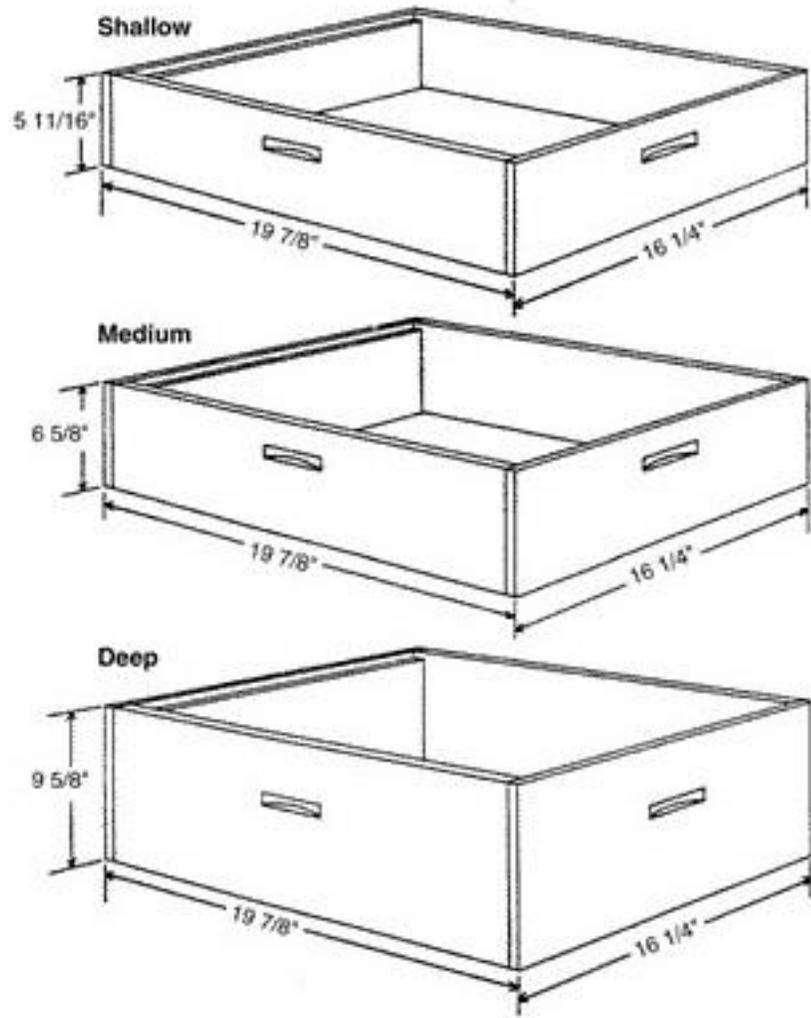


US Wooden Langstroth type hives



A Polystyrene hive – made by Lyson, a Polish Company

Boxes



Some call all boxes supers – in part because boxes are superimposed on one another.

The brood nest (in this area*) is traditionally two deep boxes.

Bees are natural hoarders and keep collecting honey beyond what they need to survive the winter. This is the honey that the beekeeper collects. The honey is put by bees in honey supers – in this area* they are typically smaller boxes due to the amounts the bees collect.

Boxes are commercially available in 8 and 10 frame widths. The ones in the diagram to the left are 10 frame width.

* All beekeeping is local. (Heard that before?)

Capacity and Weight

*While boxes are added as needed (and mostly empty), there are times when they **all** have to be removed. One thing to remember is that you can move frames one at a time instead of a box at a time.*

10 frame deep	90,000 worker cells	70 – 90 pounds
10 frame medium	62,000 worker cells	45 – 55 pounds
10 frame shallow		30 – 40 pounds
8 frame deep	72,000 worker cells	56 – 72 pounds
8 frame medium	49,600 worker cells	36 – 44 pounds
8 frame shallow		24 – 32 pounds

There is also a special comb honey box that is shorter than the shallow super. It is not commonly available in 8 frame width.

Question – if you wanted to use 8 frame medium boxes for your hive's brood chamber, how many boxes should you plan on using and how would you figure it out?

Brood chamber function

The brood chamber is the guts of the bee's nest. It is where the queen lays eggs, and where the colony stays when it gets cold. Some honey and pollen (the pollen being more correctly called Bee Bread) is stored there.

Brood chambers start small and are added to by the beekeeper as colony population expands. Once the maximum number of beekeeper decided boxes is reached, the number of boxes for the brood chamber remains the same – even when bee population numbers change.



The simplest explanation of the brood chamber is “that’s where the brood is.” It is more than that: it is the core of the nest; not only is it where the brood is raised, but it is where honey & pollen are stored ahead of the coming winter.

Frames and foundation

When Langstroth first patented his hive, there was no such thing as foundation. It was designed in order to give the bees a map of where they should draw out cells and of what size. Foundation was first made from beeswax – more and more today it is made of plastic.



A very traditional Wooden Frame

Plastic ones exist too.



Black Plastic Foundation with added beeswax

Beeswax foundation has some issues – like it can't be shipped when it is cold. BUT some beeswax is added to plastic foundation to make it more attractive to the bees.



A Foundationless or Pyramid Style Frame

The bees are expected to draw their foundation as they like, with cells of various sizes.

Bottom boards – the primary entrance



A traditional wooden bottom board with an entrance reducer. The bees have access to a “front porch” on which they can land.

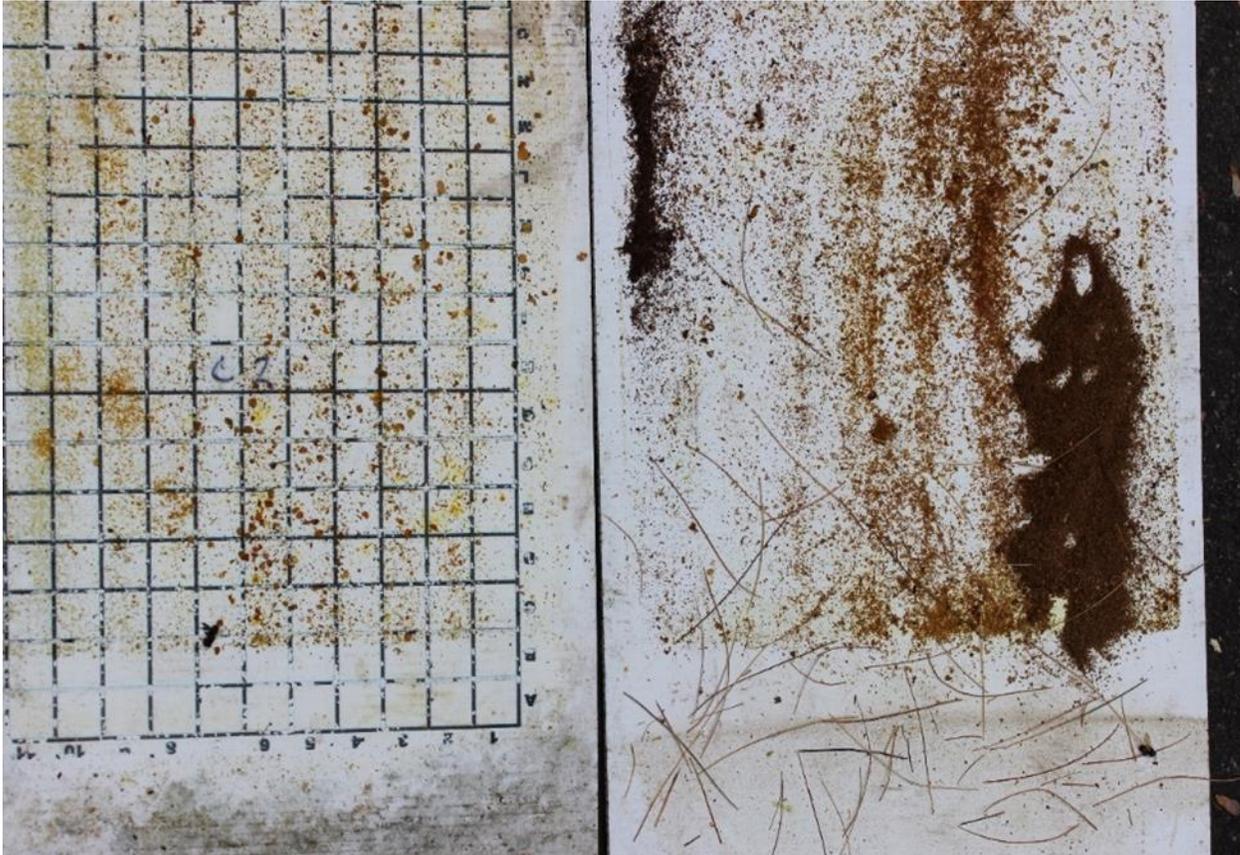
Bottom boards used to be reversed with the seasons. The entrance reducer, while an additional piece of equipment, makes it unnecessary to lift boxes and disturb the nest!



Screened bottom boards were first designed as a mechanical integrated pest management device for removing fallen Varroa mites from the colony.

Some now use the trays as a way of examining hive activity. They usually come with a way to close off the screen for winter. They also increase colony ventilation.

Reading a bottom board tray



Beekeepers become detectives when examining trays. Not only Varroa mites fall through the screening but all type of hive debris as well.

Some trays are more plastic impregnated sheets and have grid markings on them, making it easier to look at sample areas.

In the picture on the right, there are bits of wax that have been torn from cells containing honey. The colony was probably robbed!

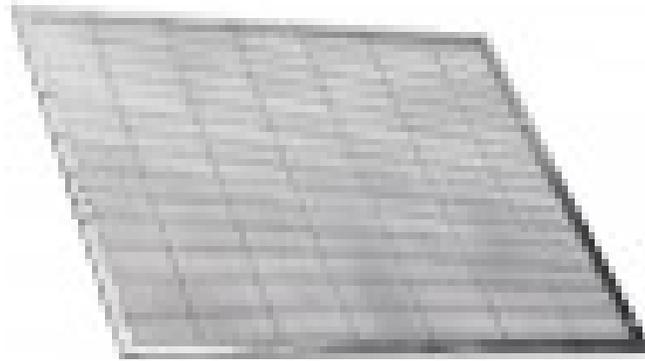
Stick Boards, as they are called, are commonly used to gather three days of activity.

Queen excluders

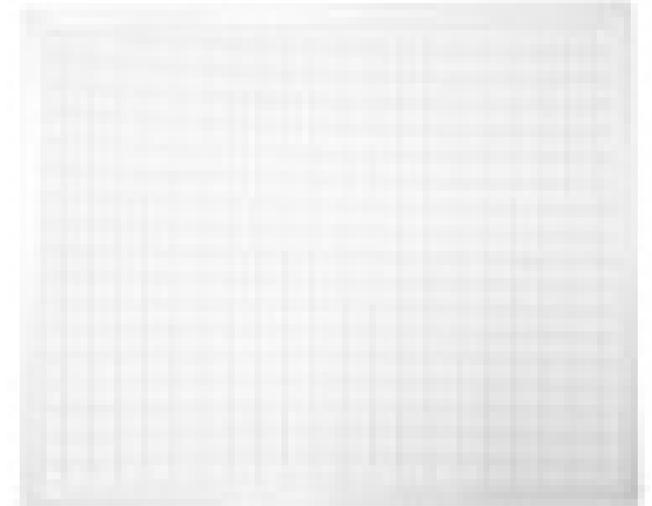
While some beekeepers call them honey excluders, they are mostly used at the top of the brood chamber and below added honey supers to keep the queen confined.



A wood framed metal queen excluder



A welded metal queen excluder



A plastic queen excluder

Q. Why might a beekeeper place a queen excluder at the bottom of the brood nest?

Honey Supers

Are simply boxes that go on top of the brood nest that surplus honey is stored in.



← This is what you want in your honey supers at the end of a “flow.”

Honey supers containing undrawn foundation should be added one at a time. You’ll need to learn how heavy the flows are in your area to determine how many honey supers to have on your hive.

Special frames and boxes are used for honey that will be eaten in the comb. “Sections” as they are called often sell for premium prices. Beekeepers have competitions at honey shows for who can make the nicest looking comb honey! Shown at right is ½ of a “Ross Round” frame.



Inner cover

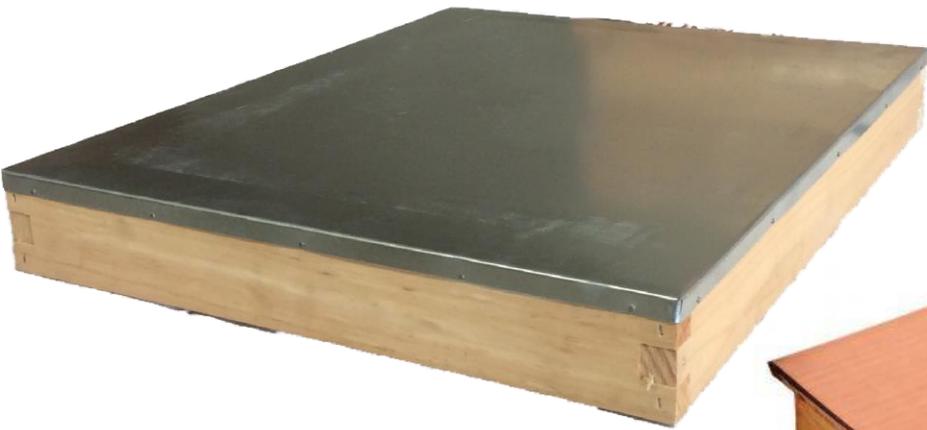
Used with a telescoping cover, an inner cover can be great to feed through! The notch makes an upper entrance. The center opening fits a bee escape. Some beekeepers use a canvas cloth as an inner cover instead of a board.



Notch down in winter, up in summer!

Outer covers

Bees like their nest sealed, while beekeepers like to be able to work hives. Covers need to be removed for hive inspection. Telescoping covers REQUIRE an inner cover, so that a hive tool can be used to break the seal.



Telescoping Covers



Migratory Cover

Adding Brood Chamber Boxes

Add a brood chamber box when the current one is 80-90% in use, up to the number of boxes you decide the bees need for a brood chamber.



Not quite ready



Past Ready

There are hive types other than Langstroth

Beekeepers are forever trying new ideas – our advice is to stick with what is widely used, especially while you learn bee basics!



A Kenya Style Top Bar Hive



A Warre' or The People's Hive

Feeders

It should go without saying that bees need to be fed if there isn't natural food for them and they lack adequate stores



A frame feeder – takes the place of 1 or 2 frames.

Bees can drown. Some newer ones have ladders to help prevent bee death.



An Entrance or Boardman type feeder.

Leaks a bit, and can incite robbing.



A Miller type feeder, it goes on top of the brood nest.

There are lots of variations! It can hold several gallons of syrup.

A 1 gallon Paint Can or empty jar can be turned upside down and set on sticks above the hole in the inner cover and surrounded by an otherwise empty box - a great inexpensive feeder.



Putting food by for winter starts in the spring

Honey bees are natural hoarders, which is what makes surplus honey possible.



Over time, the bees need to collect enough food for themselves in advance of winter. They really need enough to last until natural food availability NEXT spring. The beekeeper watches the process, and weather conditions, learns when to expect “flows”, providing supplemental food when necessary.

It is better to feed the bees ahead of winter than having to open the hive to feed in winter!

Hives with good winter stores should weigh about 130-140 pounds in early November. If your hive doesn't weigh that much, don't panic – it just means you'll have to provide food for the bees over winter.

Getting bees

Are you the type that likes to place an order for delivery or is the thrill of the hunt more your style?



A 3lb package



A 5 frame nucleus colony



A swarm

Packages



- Available early in the beekeeping year
- Recommended by your text
- No brood disease
- No drawn comb
- Can have Varroa & Small Hive Beetles
- In essence, an artificial swarm

Nucs (Nucleus) Colonies



- Can be considered a colony in miniature
- Bees in all stages of development
- Probably a young queen (though you should ask to be certain)
- Drawn comb – less for the bees to do
- Can have brood diseases (*In Maine, selling apiaries are required to have a health inspection, though this can be months before the nuc is produced.*)
- Colony already functioning as a cohesive unit

Swarms



- Bees biologically motivated to form a new colony
- Have to be caught (and first you need to know about them)
- Unpredictable Size
- Unknown Genetics
- Queen of unknown age
- Great for those with more time than money

What's the best way to start?

Your book says packages. Certainly with packages you **can** learn a great deal!

What's best for you depends on your circumstances:

For new beekeepers, the educational value of a package should not be underestimated. Plan on requeening by the middle of July.

For more experienced beekeepers, there can be a great deal of variety in nucs, and why they are available for sale.

For the budget conscious, Swarms may be the answer. Plan on requeening by the middle of July.

Give all new colonies food when first installed

Packages and swarms especially have only the food within their bodies!



- Make sure the bees can get to the food
- If the temperature routinely goes below 50°F, place your food above the cluster
- If the temperatures are routinely below 40°F, consider feeding a solid food
- For liquid feed, a light sugar syrup is best – 1 part sugar to 1 part water (by weight or volume doesn't matter)
- Sugar is a carbohydrate, bees need protein too (pollen a/k/a bee bread) – consider adding a pollen substitute if bees can't collect natural pollen

Long Lane Honey Bee Farms Presents...

How To Install A Package Of Bees

www.honeybeesonline.com



David Burns, EAS Certified Master Beekeeper

Questions?

Please get your bees and equipment plans made soon. We covered much ground tonight – ground which you'll hopefully find useful as you work your bees.

