



Getting Started with Honeybees

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About Capital Bee Supply



Manufacturers and Purveyors of Fine Beekeeping Equipment



Capital Bee Supply

- Committed to
 - High quality products
 - Sustainable practices
 - Community education



Why do people keep honeybees?

“We have chose to fill our hives with honey and wax; thus furnishing mankind with the two noblest things, which are sweetness and light.”

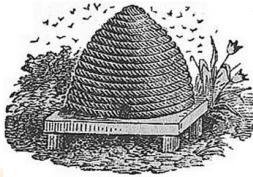
--Jonathan Swift

Designated as Wisconsin's Official State Insect in 1977



Why do people keep honeybees?

... For so work the honey-bees,
creatures that by a rule in nature, teach
the art of order to a peopled kingdom.



William Shakespeare
King Henry V

The value of honeybees...

• *To make a prairie it takes a clover and one bee.*

Emily Dickinson

- Pollination
- Honey
- Beeswax
- Other products from the hive
 - Royal jelly
 - Propolis
- Education, enjoyment, enlightenment

Why people keep honeybees

- Pollination
- Species preservation
- Education, enlightenment, enjoyment
- Products
 - Honey, beeswax, propolis, pollen, mead, queens and/or nucs

"All of American agriculture is suffering terribly now from trying to force a process based on the workings of Nature into an industrial and business model. The ability to produce quality food has been abandoned in the quest to grow ever larger quantities of cheap, low quality commodities from our vast resources of soil and water. Because human health depends very largely on having continuous access to quality food, almost all Americans are suffering as a result of this process."

Kirk Webster, 2006

Abbreviated History of Beekeeping

- **Beekeeping, ~15,000 B.C. - ~1600 A.D.**
 - Bees housed in clay pots, straw baskets, trees or hollow logs (Skeps)
 - Queen (King) bee was thought to be male
 - No understanding that bees made wax or that the bee visits to flowers had anything to do with the formation of seeds and fruit
 - Bees were typically killed in autumn to collect honey
 - Swarms were used to stock the bee yard each spring
 - **Honey bees are not native to the Americas.**



Arrival of Honey Bees in North America

- Likely came from England and arrived in Virginia in 1622
- 1639 – Colonies found throughout Massachusetts
- 1650 – Pennsylvania, Connecticut
- Honey bees had swarmed their way into Michigan by 1776 and Missouri, Indiana, Iowa and Illinois by 1800.

Westward movement was slower



Is Beekeeping for Me?

- Some things to consider
 - **Will I get stung?**
 - Yes at some point in time
 - Honeybees are typically not aggressive, but they are defensive.
 - **The risks**
 - Individuals differ in their level of reaction to bee stings
 - Immune system dependent
 - Sting site dependent



Classification of Sting Reactions

Normal	Immediate, local, transient
Large local	Delayed, prolonged, progressive
Systemic	Immediate, generalized (anaphylaxis)
Other	Toxic, serum sickness



A large local reaction to a sting



Is beekeeping for me?

- Physical effort
 - **Amount of physical effort depends on type and size of equipment used**
 - Lifting and manipulation of hive bodies and frames
 - If you have someone who could assist you, will they?



Is beekeeping for me?

- Time requirements
 - **Bees are livestock.** Even though they largely take care of themselves, there are tasks the beekeeper must do in order to care for their bees (beekeeper vs. bee-haver). Bees work on their schedule, not the beekeepers.



Is beekeeping for me?

- Zoning restrictions and neighbor concerns
 - **Beekeeping is not allowed in all communities**
 - Some municipalities require a license, others require a conditional use permit, some don't allow it at all.
 - What is one person's hobby may be another person's nuisance



Is beekeeping for me?

- Startup costs
 - Bees - \$100-150
 - Hive equipment
 - Cost varies by type and features - \$200 and up
 - Protective gear - \$20 and up
 - Tools - \$30 and up
 - Municipal license or permit - \$10 to \$110

Average among our customers \$450

Is beekeeping for me?

- Annual costs
 - Bee feed, supplements and medications
 - Cost varies by forage conditions and beekeeper philosophy
 - Annual license fee
 - Only in some communities
 - Replacement of bees that die out
 - May or may not incur costs

Average among our customers = \$100

Is beekeeping for me?

- Emotional issues
 - Sometimes colonies die
 - “Normal” 20%-30% loss of colonies each year
 - Bee health or genetic issues
 - Environmental issues
 - Beekeeper errors

Is beekeeping for me?

- Location issues
 - Carrying capacity of the land
 - Bees need lots of nectar producing flowers with staggered bloom times
 - Is the location already saturated with bees (both native and managed)?
 - Are you displacing native bees?

Getting Started - First steps

- Check local regulations regarding legality
- Take a beginning beekeeping class
- Research
 - **Lots of information online, but be aware of**
 - regional differences and issues (e.g. climate, pests)
 - differences in beekeeping philosophies



DECISIONS, DECISIONS



Hive Types

- Langstroth
- Top Bar
- Warre

All have moveable frames or bars to facilitate inspection – required by law in most states in response to American Foul Brood disease



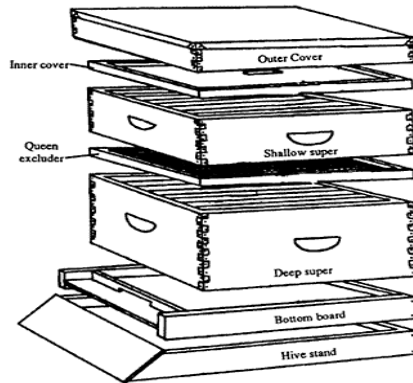
The Langstroth Hive



- Lorenzo Lorrain Langstroth (1810 – 1895) is considered the father of “modern” beekeeping
- The Langstroth Hive
 - **Used by >75% of beekeepers worldwide**
 - **Stackable hive bodies**
 - **Moveable and interchangeable**
- 1851 – The “bee space” phenomenon
- 1852 – Removable frame hive patent
- 1858 – *The Hive and the Honeybee*



Langstroth Hive Components

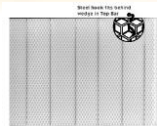


Langstroth Hivebody Weights

10 frame equipment

- Deep: 60 – 100 lb
 - **Used for brood rearing and honey storage**
- Medium (Illinois, 3/4) 35-55 lb
 - **Used for brood rearing and honey storage**
- Shallow 25 lbs
 - **Used for honey storage only**

Langstroth Commercial Foundation and Frame Types



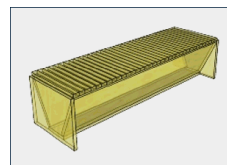
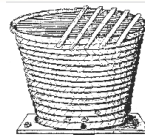
- Traditional wired or crimp wired wax foundation with wood frames
- Plastic foundation with wood frames
- One piece plastic foundation and frame
- No foundation with wood frame (foundation-less)
- 2" plastic foundation at top with wood frame

10 frame vs. 8 frame equipment

- No standardized width for 8 frame equipment
 - **Slight variations between manufacturers**
- Limited availability of 8 frame accessories
- An 8-frame deep weighs as much as a 10-frame medium
 - **If you are concerned about the weight use 8-frame mediums or a top bar hive**



Top Bar Hives



Top Bar Hive

- Moveable top bars
- Africa/Southern Europe
- 1600's to Present
- No need to destroy hive to collect honey
- Slanted walls are perceived by bees as vertical
- Width of bar must be 1 3/8". Other bar dimensions are not critical, but recommend having interchangeability with Langstroth hive frame sizes



Top Bar Hive





Top Bar Hive/Langstroth Combinations – Horizontal Langstroth



Top Bar vs. Langstroth

– Advantages of Top Bar compared to Langstroth

- Relatively simple and inexpensive to build
- No frames to buy and assemble
- No queen excluder needed
- No extractor needed
- Easy to inspect entire hive (no lifting of heavy hive bodies)
- Produces lots of high quality beeswax
- Less disturbance and stress to bees during inspection
- Great for comb honey production



Top Bar vs. Langstroth

– Disadvantages of Top Bar compared to Langstroth

- Heavy and difficult to move (but so are Langstroths if moving as a unit)
- Requires comb rebuild after honey harvest
- “Not suited for cold climates” – much debate over this
- Comb delicate and easy to break during inspection
- Hive expansion difficult to implement



Warre Hives – vertical top bar hive

Abbé Émile Warré (WAR-ray) (1867-1951)

– French monk who experimented with 350 hives



Why bars and frames are used



Races or Types of Honeybees



Apis "Bee" *mellifera* – "Honey Bearing"

SCIENTIFIC CLASSIFICATION	
KINGDOM	Animal
PHYLUM	Arthropod
CLASS	Insect
ORDER	Hymenoptera
FAMILY	Apidae
GENUS	<i>Apis</i>
SPECIES	<i>Apis mellifera</i>



Apis Mellifera

- ~20,000 *Apis* species worldwide
- Dark bees (more black than brown)
 - *Apis mellifera mellifera* - German
 - *Apis mellifera macedonica* - Russian
 - *Apis mellifera caucasica* - Caucasians
 - *Apis mellifera carnica* - Carniolans (Yugoslavia)
- Light bees (more brown than black)
 - *Apis mellifera ligustica* - Italian
 - *Apis mellifera scutellata* – South African



Apis mellifera ligustica



Italian Honey Bee

- Typically the most common race of honeybee in the USA
- Colonies are usually large and winter well
- Very good honey producers
- Usually gentle and non-aggressive
- Swarming instinct is not especially strong
- Minimum propolis
- Keep a clean hive and are quick to get rid of the wax moth
- Queens lay all through the summer, so a large amount of stores are used for brood rearing
- Italian bees have a strong tendency to rob
- Prone to drifting



Apis mellifera carnica

Carniolian Honey Bee

- Relatively gentle and non-aggressive
- Better at orientation than Italian, less drifting
- Less robbing than Italian
- Able to overwinter in smaller numbers
- Good environmental adaptation
- Steep brood production during nectar flow
- Low use of propolis
- Resistant to brood diseases
- Workers live up to 12% longer than other breeds
- Prone to swarming
- Does not thrive in hot weather



Apis mellifera macedonica

Russian Honey Bee

- Varroa mite resistant
- Tracheal mite resistant
- Cold tolerant
- Swarm prone
- Defensive
- Hard to obtain



Apis mellifera caucasica

Caucasian honey bee

- Varroa mite resistant
- Cold tolerant
- High propolis
- Less docile



Obtaining Honey Bees

How you obtain the bees may drive the equipment decisions

- Packages – cage of bees with a mated queen – limited supply of packages
- Nucleus colonies – “miniature” colony – even more limited supply
- Swarms



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 - regional differences and issues (e.g. climate, pests)
 - differences in beekeeping philosophies
- The time to start the process is now.....



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