History of Beekeeping is Important ..... 

I started beekeeping in 2005. The skill of beekeeping has remained the same since then but outside forces & diseases forced us to change our approach to skill and knowledge.

Outside Forces
Colony Collapse Disorder
Genetically Modified Organism—GMO
Nosema Ceranae
Small Hive Beetles
History of Beekeeping is Important ..... 

Women and Families became interested in beekeeping 

People recognized the decline of pollinators in their environment. 

Honeybees are now popular on the Internet & Social Media. 

People you meet know a relative that has done it.
History of Honey Bees
Right Now....

Honey bees are found everywhere except in the polar regions.
History of Honey Bees

6000 BC

Honey bees were found in the hollows of trees and rock crevices. Honey was harvested by primitive man.
History of Honey Bees

5000 BC

The earliest of beekeeping cultures were found in Middle East using Pottery vessels.
History of Honey Bees

1450 BC

Ancient Egypt used mud and clay to construct managed colonies.

Figure 2. Honey harvesting from hives, shown in a wall painting c. 1450 B.C. in Rekhmire's tomb, West Bank, Luxor, Upper Egypt (Davies, 1944)
History of Honey Bees

300 BC

In Greece pottery was used
History of Honey Bees

Skep material was from hazel twigs.
Protective clothing used.
History of Honey Bees

1682

Sir George Wheler

Woven Wicker baskets with top bar. The bees did not attach comb to sloping inward sides.
History of Honey Bees

Vietnamese used logs with the top bar. These bars were removed.
History of Honey Bees

1850

1935
History of Honey Bees

In Europe they used logs and skeps. The smaller ones were used to catch swarms.
In all these primitive hives fulfilled a certain function:
• It provided protection from the wind, rain, hot and cold.
• Their flight entrances were small to help guard bees
• Beekeeper entrance made it accessible for harvest.
History of Honey Bees

What were the reasons primitive people and modern people keep bees:

- Pollination
- Honey for sale or trade
- Honey for medicine and food preservation.
- Wax for candles and products
History of Honey Bees

Primitive beekeeping consisted of catching swarms and at the end of the season killing them for the harvest.
History of Honey Bees

Luis Mendez 1586 determined the queen bee is a female and was the mother of all the bees in the colony.

Nickel Jakob 1568 realized that the workers could raise a queen from eggs.

Charles Butler 1609 showed that the drones were male.

Richard Remnant 1637 showed that the workers were females.
History of Honey Bees

1851

LL Langstroth
Known as the father of beekeeping. He achieved a practical application for removable frames and box using the bee space.
Beekeeping exploded in popularity. The hives could be constructed vertically. He also used foundation, smoker and queen cage.
Franz von Hruschka
Produced a centrifugal force extractor.
Let’s play ....

‘Name That BUG’
Which one is the Honey Bee?

- Phylum: Arthropoda
- Class: Insecta
- Order: Hymenoptera
- Family: Apidae
- Genus: Apis
- Species: Mellifera

- Phylum: Arthropoda
- Class: Insecta
- Order: Coleoptera
- Family: Nitidulidae
- Genus: Aethina
- Species: A. tumida
<table>
<thead>
<tr>
<th>Classification</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Phylum:</td>
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<tr>
<td>Species:</td>
<td>Mellifera</td>
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</tbody>
</table>
Genus: *Apis*

- *Apis mellifera* – Western Honey Bee
- *Apis cerana* – Eastern Honey Bee
- *Apis dorsata* – Giant Honey Bee
- *Apis florea* – Small Honey Bee
Honey Bee Species & Races

- Species: Western Honey Bee – *Apis mellifera*

Races:
- *Apis mellifera mellifera* - German
- *Apis mellifera ligustica* – Italian
- *Apis mellifera carnica* – Carniolan
- *Apis mellifera caucasica* - Caucasian
- *Apis mellifera scutellata* - African
Geography and Honey Bee Races

Geographic location is a main driver of race classification and subsequent species formation. Geographic isolation is the main evolutionary driver of characteristics in races. Rivers, mountain ranges, and seas help to prevent cross breeding. Another factor in characteristics is climate, eg. tropical or northern colder climate.
European races

- *A. m. mellifera*
- *A. m. ligustica*
- *A. m. carnica*
- *A. m. caucasica*
Criteria

• Gentleness
• Disease resistance
• Spring buildup
• Overwintering ability
• Excess swarming
• Honey production
• Other traits
German

**Merits**
- First stock to be imported to America
- Beautiful white cappings on honey comb
- Good overwintering ability
- Black bees

**Limitations**
- Susceptible to most brood diseases
- Quite defensive
- Short tongue
Italians

Merits

• Less defensive and prone to disease than German stock
• Light in color, yellow/brown with dark bands
• Strong brood rearing
• Good housekeepers
• Good honey production
• Large queens, normally golden color, easy to spot

Limitations

• Rear lots of brood outside of honey flows, (winter colony) consuming excess food
• Bad robbing
Carniolan

Merits
- Exceptionally docile
- Explosive early spring buildup
- Decrease brood rearing in dearths, small winter colony
- Dark in color with broad grey bands

Limitations
- Excess propensity to swarm
- Not a very good comb builder

Somewhat isolated to Austria, Yugoslav region
Caucasian

Merits

• Longest tongue of any other race
• Extremely gentle
• Dark bees with brownish markings

Limitations

• Very low spring buildup
• Susceptible to EFB and nosema
• Copious amounts of propolis
Other “stocks”

- Cordovan
- Minnesota hygienic
- SMR (Suppressed Mite Reduction)
Hybrids

- Midnight (caucasian x carniolan)
- Starline (several Italian stocks)
- Double hybrid (Midnight x Starline)
- “Smart” Russian (SMR x Russian)
- “Smart” Italians (SMR x Italian)
- “Smart” Carniolan (SMR x carniolan)
Additional References

• **ABC & XYZ of Bee Culture**
  41st Edition  A.I. Root

• **The Hive and the Honey Bee**
  Dadant Publication

• **The Beekeeper’s Bible**
  Bees, Honey, Recipiers & Other Home Uses  Stewart, Tabori & Chang