Honey Bees

Presented
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Bees are insect members of the Hymenoptera family

- 20,000 species of bees and wasps worldwide
- Honey bees sting once and die (when they sting humans)
- Wasps can sting multiple times
- Many bees and wasps have no stinger (most males cannot sting)
- North America had 4000 species of bees before the European honey bee was introduced.
- African honey bee brought into Brazil by a researcher
  - Filled niches
  - Inbred with calmer bees reduces aggression
  - Mean bees could be due to clumsy keepers
– *Apis mellifera*

- The scientific name for the western honey bee.
- You will see the word honey bee spelled as two words and as a single word. But it is correct to spell it as two words like House fly, and bumble bee.
Honey Bees are beneficial insects

- Honey bees produce honey, wax, propolis, and royal jelly.
- Mead (honeymoon)
- They collect pollen
- Some individuals use them for bee sting therapy (Apitherapy).
People Usually Think of Bees for Honey

- Sweetener
- Original Candy
- Cough suppressant
- Soothes
- Anti-Microbial
- Anti-Inflammatory
- Anti-Fungal
- Anti-Viral
- Antiseptic
- Sterile
- Preservative
Honey Bees are beneficial insects

- Wax
  - Candles
  - Cosmetics
  - Lubricants
  - Protectant
  - Water proof
  - Sealer
  - Wound treatment
Honey Bees are beneficial insects

• As pollinators—most valuable.
Honey

**Honey** (hun’e), n., pl. hon•eys, adj., v., hon•eyed or honied, hon•ey•ing. –n

1. sweet, viscid fluid produced by bees from the nectar collected from flowers and stored in their nests or hives as food.
2. the nectar of flowers.
3. something sweet, delicious, or delightful.

[Middle Eng. hony, Old Eng. hunig; Ger./ Dutch honig; akin to Greek knekos]
HONEY

✨ **Nectar**, a liquid high in sucrose, is produced in plant glands known as nectaries.

✨ Nectar plays an important energy resource for honey bees and plays a significant role in foraging economics and evolutionary differentiation between different subspecies.

✨ Nectar is a high source of carbohydrate in the bees diet.
Honey is the complex substance made when the nectar and sweet deposits from plants and trees are gathered, modified and stored in the honeycomb by honey bees as a food source for the colony.
Honey

- One of man’s earliest sweeteners
- Mentioned in all early books (Bible, Koran, etc.)
- Originally harvested from trees/caves
- Eventually from man-made containers (Skeps, Langstroth, Top bar, Warre, Flow Hive)
Honey

- Extracted (liquid) honey
- Section (comb) honey (Ross Rounds)
- Cut comb honey
- Creamed honey
- Chunk honey
- Products w/ honey

(shampoo, soaps, creams, foods, beverages, candies, medicines, etc.)
Worker bees at a young age will secrete beeswax from a series of glands on their abdomens.

Beeswax to form the walls and caps of the honeycomb.
Beeswax

Harvested when cappings removed for extracted honey

Also obtained from ‘extra’ wax and wax scrapings
Beeswax uses - 1

Foundation for frames
- Thin for comb sections/cut comb
- Heavier for extracting
- Heavier for brood rearing
Beeswax uses - 2

- Cosmetics
- Candles
- Wax (furniture, skis, dental impressions, floor/furniture, industrial, mustache, etc.)
- Finish (varnish, wax, polish lenses,)
- Crayons
- Insulator
- Metal castings
- Bagpipes (soften bag)
Pollen is used as an essential source of protein to raise the bee brood.

Excess pollen can be collected from the hives of Apis Mellifera and Apis Cerana.
Pollen

Bees collect pollen during foraging

🌟 Comb body hairs & put on hind legs
🌟 Beekeeper puts grid at colony entrance to scrape from hind legs
Pollen uses

Feed to bees in pollen substitutes

Human –

• Energy Enhancer
• Skin Soother
• Respiratory System
• Treating Allergies
• Digestive System
• Immune System Booster
• Treats Addictions
• Supports the Cardiovascular System
• Prostate Aid
• Infertility Problems
Royal jelly is a honey bee secretion that is used in the nutrition of larvae. The nurse bee secretes royal jelly from its’ mandibular gland.

Royal jelly is collected from each individual queen cell when the larvae are about 4 days old.

A well-managed hive during a season of 5–6 months can produce approximately 500 grams of royal jelly.

Producers must have immediate access to proper cold storage until it is sold or conveyed to a collection center. To aid the royal jelly shelf life, sometimes honey or beeswax are added.
The word **Propolis** comes from Greek origin and means to defend the city.

Propolis or bee glue is created from resins, balsams and tree saps and utilized as anti-microbe or sealant for the hive.

Because of its’ high medicinal qualities, propolis is consumed by humans as a health supplement in various ways and also used in some cosmetics.

Propolis is available in capsule form and even used as an ingredient in some toothpaste.
What an interesting name, right?

Bee bread is actually the main source of food for most larvae and bees.

Comprised of all essential amino acids, high contents of vitamins especially vitamin K, enzymes, and flavonoids.

Bee bread is made of pollen mixed with bits of honey, bee wax, and bees' digestive enzymes.

Known to be useful in treating anemia, hepatitis, insomnia, stress, failing memory, cholesterol, digestive tract disorder, promoting kids' physical and mental growth, improving memory, and weight gain.
Harvest recently capped worker pupae by uncapping and shaking into pan. Pickle or cook rapidly.

Pupae are the highest in protein when compared to the eggs and larvae, and have protein content equivalent to that of beef or poultry.

Brood is rich in carbohydrates, dietary minerals, B vitamins, vitamin C, vitamin D, saturated fat, monounsaturated fatty acids and polyunsaturated fatty acids.

YUMM ... YUMMM!
Known as apitoxin, **bee venom** is a colorless, clear liquid containing proteins that can lead to localized inflammation or in extreme cases, severe allergic reaction.

Bee venom has been used as an alternative medicine in apitherapy for some time for its benefits to health and to treat some illnesses.
BEE HIVE AIR

 foreseeing more popular, natural therapist have included the ability to inhale beehive air.
 foreseeing this is done by attaching a hose and mask to the cover of the beehive then the patient will sit inhaling the air circulated in the hive.
 foreseeing we can’t say we have ever tried inhaling beehive air directly with a mask but there seems to be results for asthma sufferers.
 foreseeing beekeepers will tell you the smell of a beehive especially when bees are on a honey flow, can be quite pleasant and unlike anything in nature.
MEAD

✔ Simply put, it is honey wine.
✔ It is the first alcoholic drink brewed by men, earlier than wine or beer.
✔ Today mead has evolved and expanded its flavors to include fruits such as blueberry and cherry, malt as well as various herbs and spices.
‘Other’ Bee Products

- Bee service of pollination – Almonds, Blueberries, Apples, Cranberries
- Sale of bee services (swarm/nest removal)
- Sale of beekeeping supplies
- Sale of bees – Nucleus Colonies (NUC), Packages, Queens, Brood, Full Colonies
Questions

BEEKEEPING – a truly unique job or hobby!!!