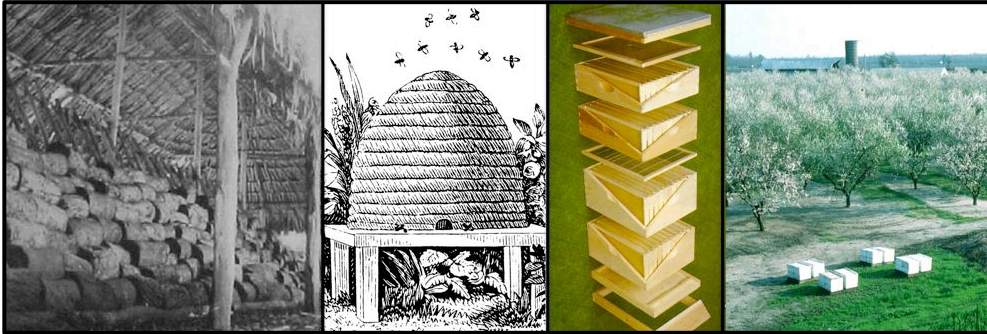


## Beekeeping

Beekeeping began independently in several parts of the world using several species of social bees that store honey. In Europe, Africa and the Middle East the bee kept is *Apis mellifera*, the western honey bee. The ancient Egyptians kept honey bees in clay-tube hives 4500 years ago; the same hives are still in use today. In much of Asia, *Apis cerana*, the eastern honey bee is kept. In the past few hundred years *A. mellifera* has been introduced to Asia, America and Australia. Before this, pre-Columbian Americans kept native stingless bees such as *Melipona beecheii*, which has approximately 1000 worker bees per colony.



- Old apiary of 500 *Melipona beecheii* log hives in Yucatan, Mexico. Each makes 0.5-1kg of honey per year. *Melipona* bee keeping is making a comeback in Mexico and Brazil.
- Skep hive for keeping honey bees, *Apis mellifera*, made from a coil of woven straw.
- Movable frame Langstroth hive with 2 deep brood boxes and 2 medium honey boxes.
- Pollination in a California almond orchard, with 4 pallets each with 4 hives. The beekeeper is paid by the grower to relocate hives during almond bloom, 4 weeks starting mid-February.

In a modern honey bee hive, the combs of hexagonal wax cells are held in wooden or plastic frames. The frames are interchangeable, of standard sizes, and when placed in a hive leave a gap of 6-8mm, the bee space, which the bees use as corridors. Boxes can be stacked to give more space in spring and summer for the expanding bee population and honey stores. The movable frame hive has several advantages. It allows the beekeeper to manage the colony easily, checking for overcrowding, swarming, diseases and queen loss. It is also easy to remove the honey and gives larger crops. The beekeeper simply removes frames or boxes full of honey, leaving the bees behind without harming them. The honey is then extracted from the cells by spinning the frame in a centrifugal honey extractor. The empty frames are reused. The movable frame hive was invented in 1851 by Lorenzo Langstroth, an American clergyman. The hive he designed, or others using his bee space discovery, are used worldwide.

In traditional beekeeping hives were made of various locally available materials including wicker, straw, logs, and clay. Straw hives, known as skeps, were widely used in Britain. In a skep, the bees build combs without frames and attach them to the hive. The combs cannot easily be removed, making it impossible to check the hive. Beekeepers would kill some colonies in late summer to harvest honey. Those that were spared would then overwinter and produce swarms in the spring. The swarms were captured to repopulate the empty skeps.

Honey bees sting! Beekeepers get used to it and don't mind a few stings. They wear a veil to prevent stings to the head. Before opening a hive smoke is blown into the entrance using a smoker, a metal can containing smouldering leaves or other organic material with a pair of bellows attached. Smoke calms the bees and reduces defensive stinging. Nobody knows why it works but it makes beekeeping much easier. Beekeepers usually inspect hives on warm sunny days. Many bees are out foraging, making it easier to inspect and manage a hive.

### Did You Know?

- \* Without bees there would be less to eat! Farmers pay beekeepers to move hives onto their farms to pollinate apples, almonds, kiwi fruit and many other crops.
- \* Some beekeepers specialize in rearing queen bees which they sell to other beekeepers who use them to requeen hives that have lost their queen.
- \* In the USA many beekeepers are migratory, trucking hives to southern States in autumn and back north in spring to take advantage of the different climates.
- \* Some British beekeepers move hives for crop pollination and honey production, for example into apple orchards in April and to heather moors in August.
- \* Commercial beekeepers harvest c.50kg (110 pounds) of honey per hive per year.

### How Amazing!

- \* The population of a honey bee colony increases from about 5,000 to 50,000 from early spring to summer. To do this, the queen lays up to 2000 eggs per day.
- \* A honey bee colony is a giant family: mother queen and daughter workers.
- \* Male bees are called drones. They don't work or collect nectar.
- \* Beekeepers worldwide harvest more than 1,000,000,000kg of honey per year—one kg for every 6 people. How many pieces of toast can that spread over?
- \* Queen bees are often mailed, each in a cage with a few workers to care for her.