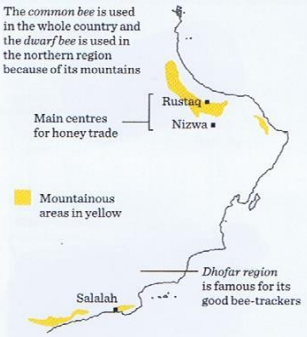
Beekeeping in Oman

In many cultures, the use of honey is more than a source of nourishment. It is considered as a talisman or a symbol of sweetness. In Islam, there is a passage in the Holy Quran which talks about the honey bee. According to Hadith, Prophet Muhammad (Peace Be Upon Him) strongly recommended honey for healing purposes. Here in Oman, the traditional beekeeping has been part of the Omani culture. During the 17th century, the illustrious Imam Saif bin Sultan was known as a keen apiarist — raising bees in the bountiful gardens of his fortress in Rustaq. For at least a millennium, generations of Omani beekeepers have perfected two techniques of honey farming.

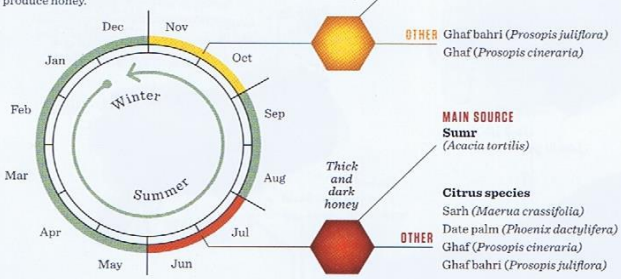
Region

The *common bee* is used in the whole country and the *dwarf bee* is used in the northern region because of its mountains



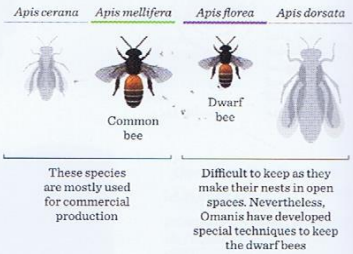
Seasons

There are two seasons: in summer and in winter. These are when the flowers are available, and then, the bees are very busy getting nectar to produce honey.

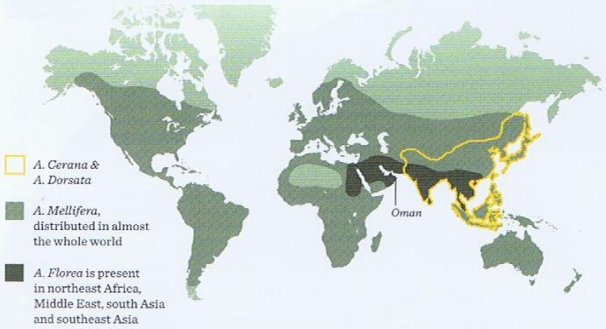


Bee species

There are four commonly recognised species of honey-producing bees around the world, two of which (below in colours) are present in Oman

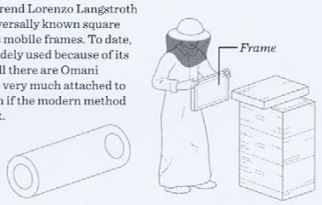


Global distribution of the bee species



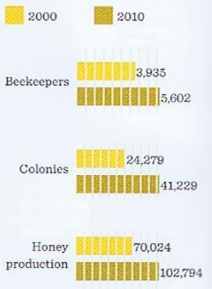
Tradition vs economy

In 1851, the Reverend Lorenzo Langstroth invented the universally known square beehive that uses mobile frames. To date, this method is widely used because of its efficiency, but still there are Omani apiarists who are very much attached to the tradition even if the modern method spells more profit.



Hive type	*Log hive (Tubl)*	*Langstroth hive*
Cost	RO3 - RO5 (per log)	RO10 - RO12 (frames)
Honey	4 - 6 kg	8 - 12 kg
Honey's price	RO30 - RO50	RO15 - RO25

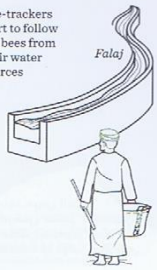
Local honey production



Tracking the bees

Omani bee-hunters are known because of their skills to track the bee colony

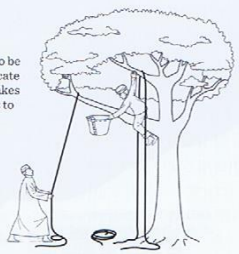
- Bee-trackers start to follow the bees from their water sources



- Bee hives are commonly found in caves located in the trees and mountains

Bee-hunters need to be very attentive to locate bee queens. They takes the necessary steps to start a new colony:

- The queen
- Some workers
- A piece of comb



Beekeeper's insect foes

These two can destroy entire bee colonies:

Varroa destructor
Virulent parasitic mite that attack larval and pupal bees. Is a special threat for *Apis Mellifera*

Beewolf
Predatory wasp, most of which prey on bees. Only one beewolf can destroy a whole colony.

Also pesticides sprayed near apiaries drive off the bees

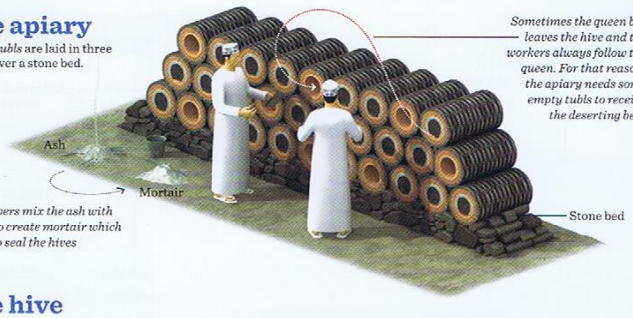
Sources Dr Hassan Al Lawati, Head of Honey Bee Lab, Directorate General of Agriculture and Livestock Research, Ministry of Agriculture. Mahmood Al Rahbi, local beekeeper. *Beekeeping in Asia*, Pongthep Akratanakul, FAO. *'Honeymen' in Feequin*, Adarsh Madhavan/Priya Arunkumar, Black&White Magazine. *Honeebees in Oman*, Roderic Dutton. *Beekeeper's honey fit for a Sultan*, Birmingham Post & Mail. *Biometrics, bee forage plants, pollen spectrum of honey and beekeeping in Arab, African and Asian countries*, Dr Moustafa H. Hussein. *Love story with bees in Oman*, Abu Omar. The high cost of a sweet tooth, IC Publications. *Sidr Honey*, Nicole Weston. *Arabian Studies*, Robert Bertram Serjeant, & Robin Leonard Bidwell.

The common bee method

Omani beekeepers keep common bees in hollow date palm logs called *tubl*.

The apiary

All the *tubls* are laid in three layers over a stone bed.



Sometimes the queen bee leaves the hive and the workers always follow the queen. For that reason, the apiary needs some empty tubls to receive the deserting bees

Beekeepers mix the ash with water to create mortair which is use to seal the hives

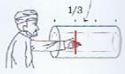
Setting up the colony

1 The hive's vessel is taken from the date palm's trunk. *Fard* and *nagal* are commonly used to make the *tubl*, as well as *khesab*

2 Dug a pith. The older the log, the better. A 40-year- old tree is woody and easy to bore

3 The midrib of the palm leaf is cut to a desired length and split into two to shape a cross

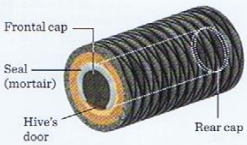
4 The cross is then placed at the first third section of the log



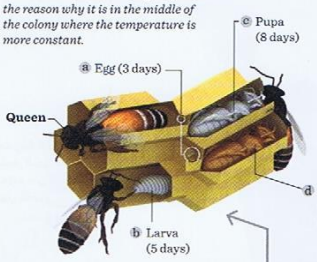
5 Then a piece of comb is placed (which include the queen and few bee workers) at the cross section. Bees will start to build the comb. This procedure is usually done after sunset so the bees won't escape

The hive

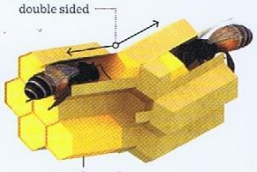
The hollow log work as a vessel that give protection and keep the correct temperature to the colony. Each *tubl* has one queen bee and a few thousand of workers mantaining the colony.



The brood need 32 to 37 degrees, that's the reason why it is in the middle of the colony where the temperature is more constant.



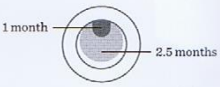
Combs are double sided



Bee-bread
Pollen mixed with honey

The comb

A structure based on hexagonal cells made by wax that the worker bee produced from their glands at the bottom of their abdomen



One worker bee needs to consume 1 kilogram of honey to produce 1 kilogram of wax.

Cells have a slope to avoid pouring

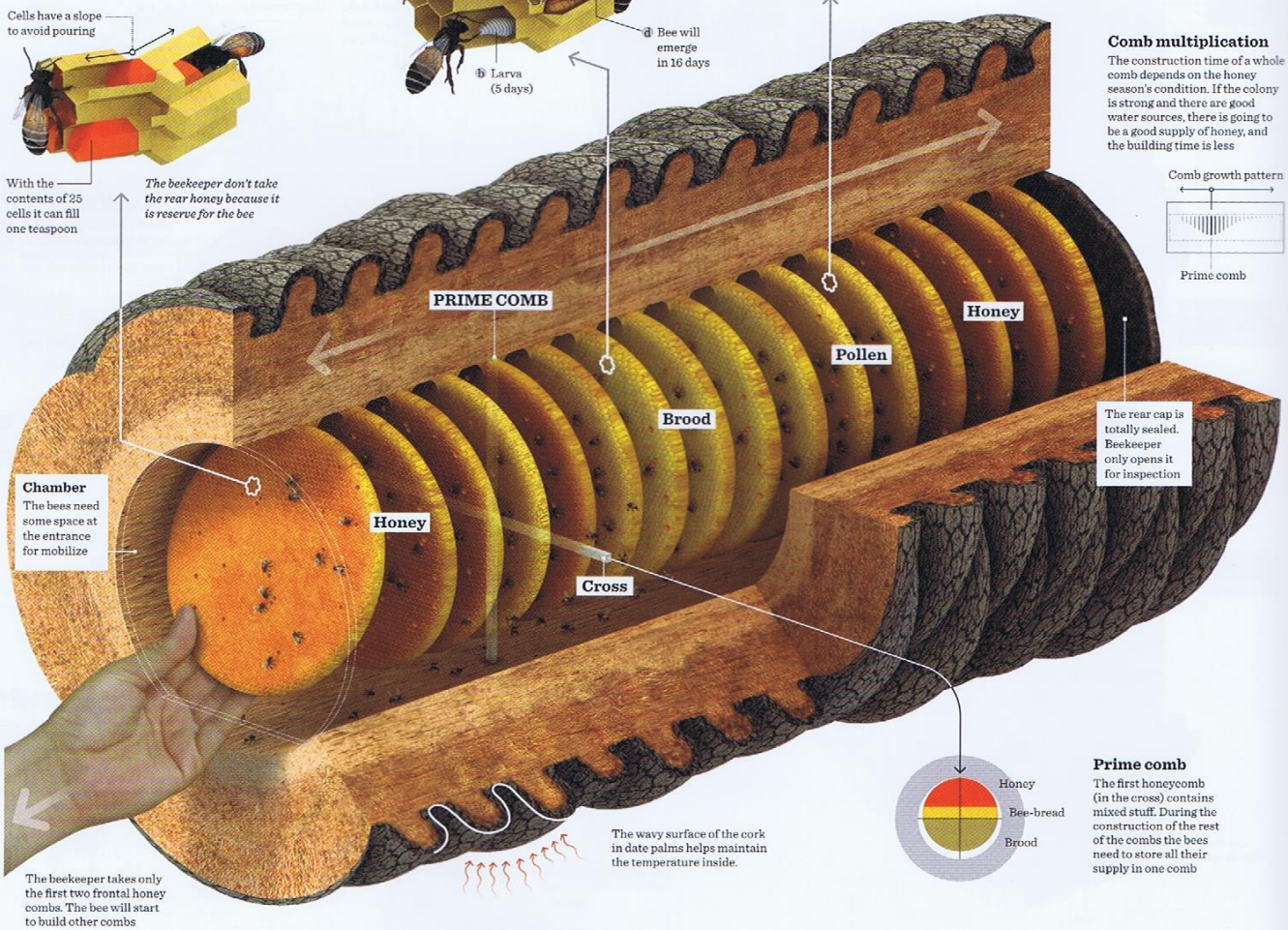
With the contents of 25 cells it can fill one teaspoon

The beekeeper don't take the rear honey because it is reserve for the bee

Comb multiplication

The construction time of a whole comb depends on the honey season's condition. If the colony is strong and there are good water sources, there is going to be a good supply of honey, and the building time is less

Comb growth pattern



Chamber
The bees need some space at the entrance for mobilize

The rear cap is totally sealed. Beekeeper only opens it for inspection

The beekeeper takes only the first two frontal honey combs. The bee will start to build other combs

The wavy surface of the cork in date palms helps maintain the temperature inside.

Prime comb

The first honeycomb (in the cross) contains mixed stuff. During the construction of the rest of the combs the bees need to store all their supply in one comb

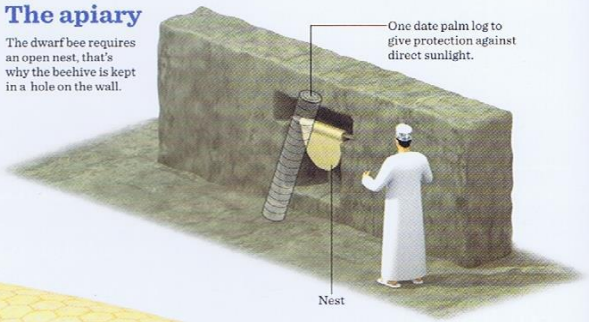
Sources Dr Hassan Al Lawati, Head of Honey Bee Lab, Directorate General of Agriculture and Livestock Research, Ministry of Agriculture. Mahmood Al Rahbi, local beekeeper. *Beekeeping in Asia*, Pongthep Akratanakul, FAO. *'Honeymen' in Feequin*, Adarsh Madhavan/Priya Arunkumar, Black&White Magazine. *Honeebees in Oman*, Roderic Dutton. *Beekeeper's honey fit for a Sultan*, Birmingham Post & Mail. *Biometrics, bee forage plants, pollen spectrum of honey and beekeeping in Arab, African and Asian countries*, Dr Moustafa H. Hussein. *Love story with bees in Oman*, Abu Omar. The high cost of a sweet tooth, IC Publications. *Sidr Honey*, Nicole Weston. *Arabian Studies*, Robert Bertram Serjeant, & Robin Leonard Bidwell.

The dwarf bee method

Only Omani apiarists practise beekeeping using the dwarf bees.

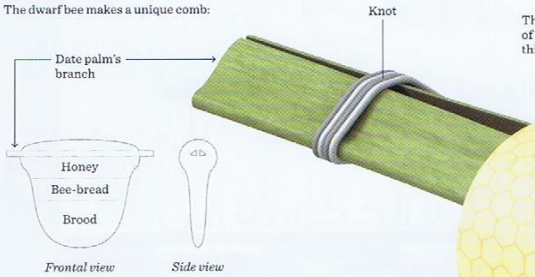
The apiary

The dwarf bee requires an open nest, that's why the beehive is kept in a hole on the wall.



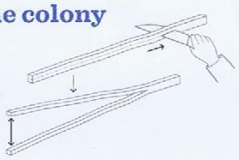
The nest

The dwarf bee makes a unique comb:

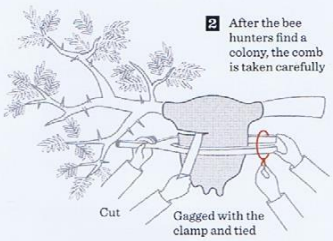


Setting up the colony

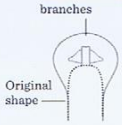
1 Prepare a clamp from the midrib of the date palm's frond by cutting the mid section, but not thoroughly



2 After the bee hunters find a colony, the comb is taken carefully

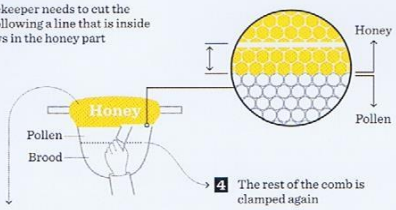


After the comb is clamped the bees build more cells around the branches



Harvesting

1 The beekeeper needs to cut the comb following a line that is inside two rows in the honey part

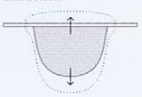


2 The top part containing the honey is extracted

3 The honey comb is squeezed to juice out the honey

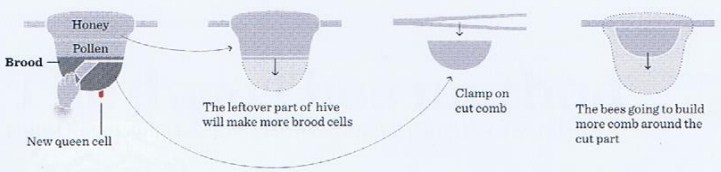
4 The rest of the comb is clamped again

5 The bee colony will again build another comb and produce honey for the next extraction



Dividing the colony

The appearance of a queen cell is a good signal that the colony of bees is preparing to leave the hive. Then, the beekeeper cuts most of the brood section to create a new colony. And the cut part is clamped with a date palm branch



The bee-bread is next to the brood for easy transport to feed the larvae

Honey cells

Bee-bread cells

Brood cells

Queen laying eggs

Pupa

Larva

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