

**PRESENTATION  
ON  
“BEEKEEPING IN INDIA”**



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**TOPIC**

**BEEKEEPING IN  
INDIA**

# BEEKEEPING

- **Beekeeping** (or **apiculture**, from Latin: apis "bee") is the maintenance of honey bee colonies, commonly in hives, by humans.
- In India beekeeping has been mainly forest based. Several natural plant species provide nectar and pollen to honey bees.

- The establishment of Khadi and Village Industries Commission to revitalize the traditional village industries, hastened the development of beekeeping in 1980s.



# What is honey bee

- Honeybee is a stinging winged insect which collect nector and pollen, produces wax and honey and lives in large communities.

# Honey Bee Classification

- Phylum Arthropoda
- Class Insecta
- Order Hymenoptera
- Family Apidae
- Genus Apis

# Honey Bees-different Species In India

Five important species of honey bees are as follows.

- The rock bee, *Apis dorsata* (Apidae).
- The Indian hive bee, *Apis cerana indica* (Apidae).
- The little bee/dwarf bee, *Apis florea* (Apidae).
- The European or Italian bee, *Apis mellifera* (Apidae).
- Dammer bee or stingless bee, *Melipona irridipennis* (Meliporidae).

# Apis Dorsata F.





# Characters:

- Commonly called 'Rock bee'.
- Largest bee of about 20mm, called the GIANT HONEY BEE.
- A single comb makes 60 pounds of honey which is maximum amount of a comb.
- Workers pollinate 12,000 flowers daily.
- Workers are very small and active, and due to their ferocious nature they are NON DOMESTICABLE.

# Apis indica F.



# Characters:

- Commonly called as Indian bee or Asian bee.
- Slightly smaller than *A.dorsata*.
- Prefer to live in dark places by making parallel combs of one foot in protected areas.
- This is very gentle species so can be domesticated easily.
- Production of honey is 6 to 7 pounds per comb, which is much less than the first one.

# Apis florea F.



# Characters:

- ⦿ Called as the little bee.
- ⦿ Smaller than the both species.
- ⦿ They are not gregarious i.e social. So make a single comb.
- ⦿ Due to docile nature i.e obedient, and rare stinging habit, their nest can be easily removed.

# Apis mellifera F.



# Characters:

- ⦿ It is called as European bee.
- ⦿ Although bee produces less honey but it is the **BEST SPECIES** for **COMMERCIAL** point of view.
- ⦿ Its ***ITALIAN variety*** is reared everywhere in Europe and America in artificial hives.

# Dammer Bee





# Characters

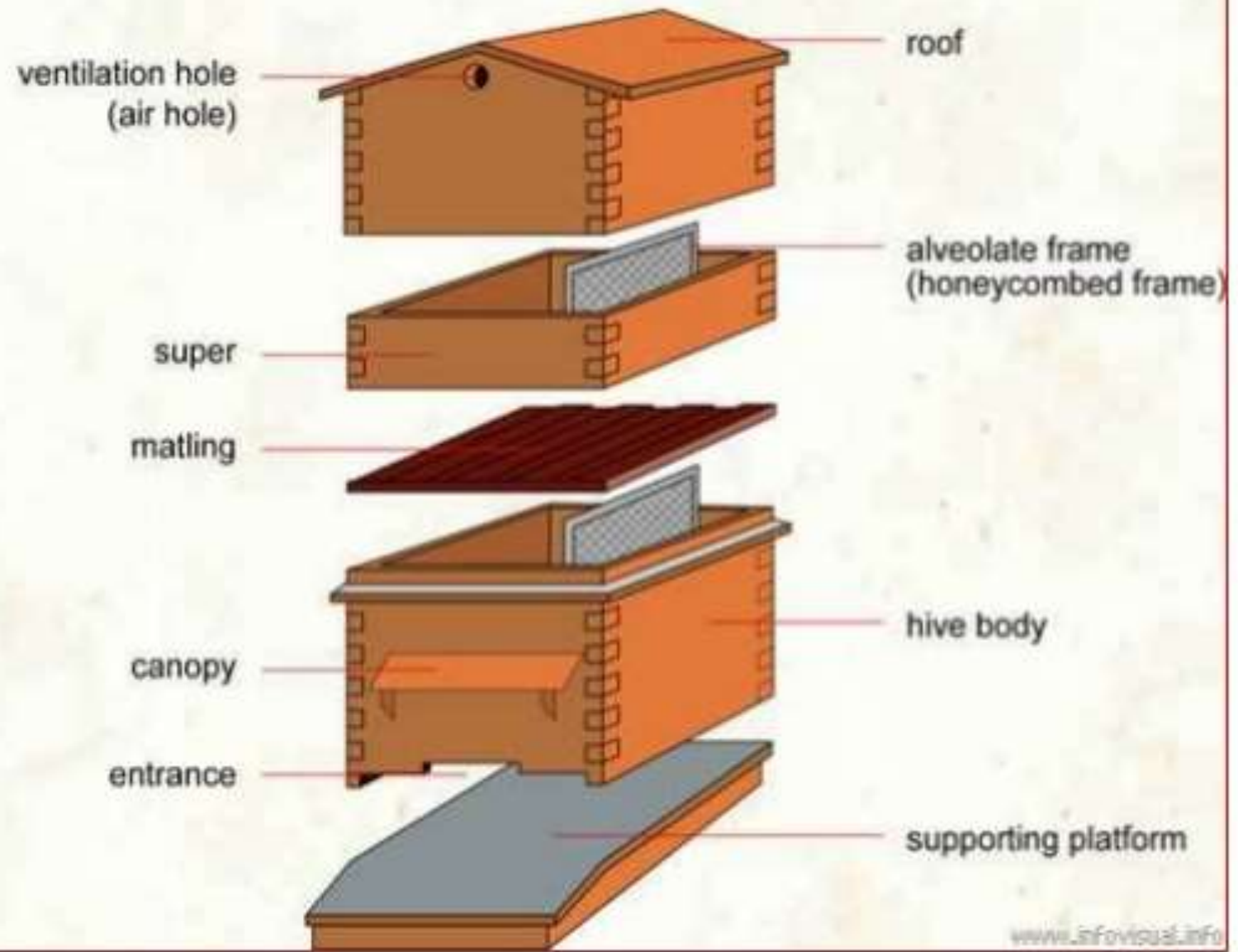
- Their size are much smaller than true honey bees.
- They build irregular combs of wax and resinous substances in crevices and hollow tree trunks.
- The comb of *melipona iridipennis* is made up of a dark material called cermen which is mixture of wax and earth or resin.
- They do not secrete wax to build the combs.

# Methods of apiculture

## **HIVE:**

- ❑ Two types of hives are used:
  1. Indigenous method of bee keeping
    - a) wall or fixed hive
    - b) Movable hive.

# HIVE



# **Modern Method Of apiculture**

**They are divided into 5 types:**

- 1. Typical Movable Hive**
- 2. Queen Excluder**
- 3. Honey Extractor**
- 4. Uncapping Knife**
- 5. Other Equipments**

# Typical moveable hive

- It is a six type:
  - (a) Stand
  - (b) Bottom board
  - (c) Brood chamber
  - (d) Super
  - (e) Inner cover
  - (f) Top Cover

**Outer Cover**  
**Inner Cover**



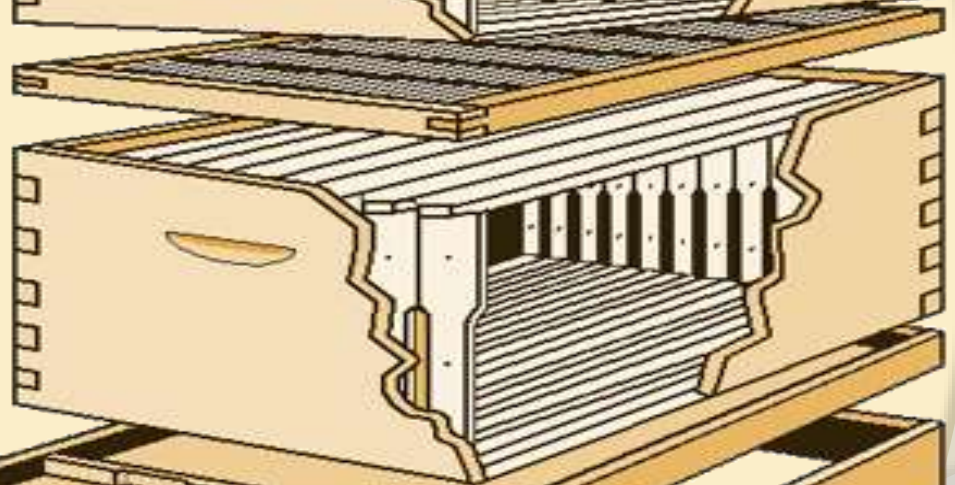
**Honey supers**



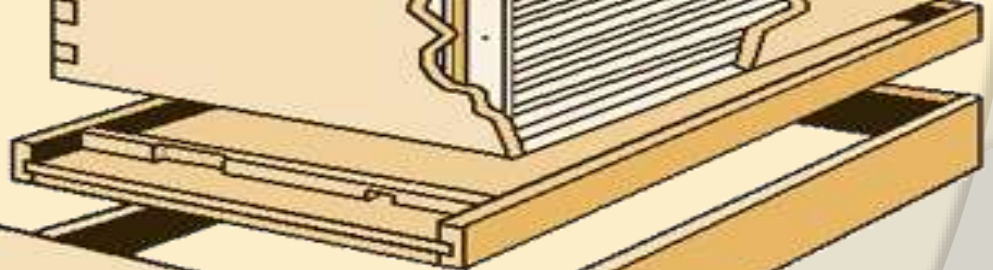
**Queen Excluder**



**Deep Super**



**Bottom Board**



**Stand**

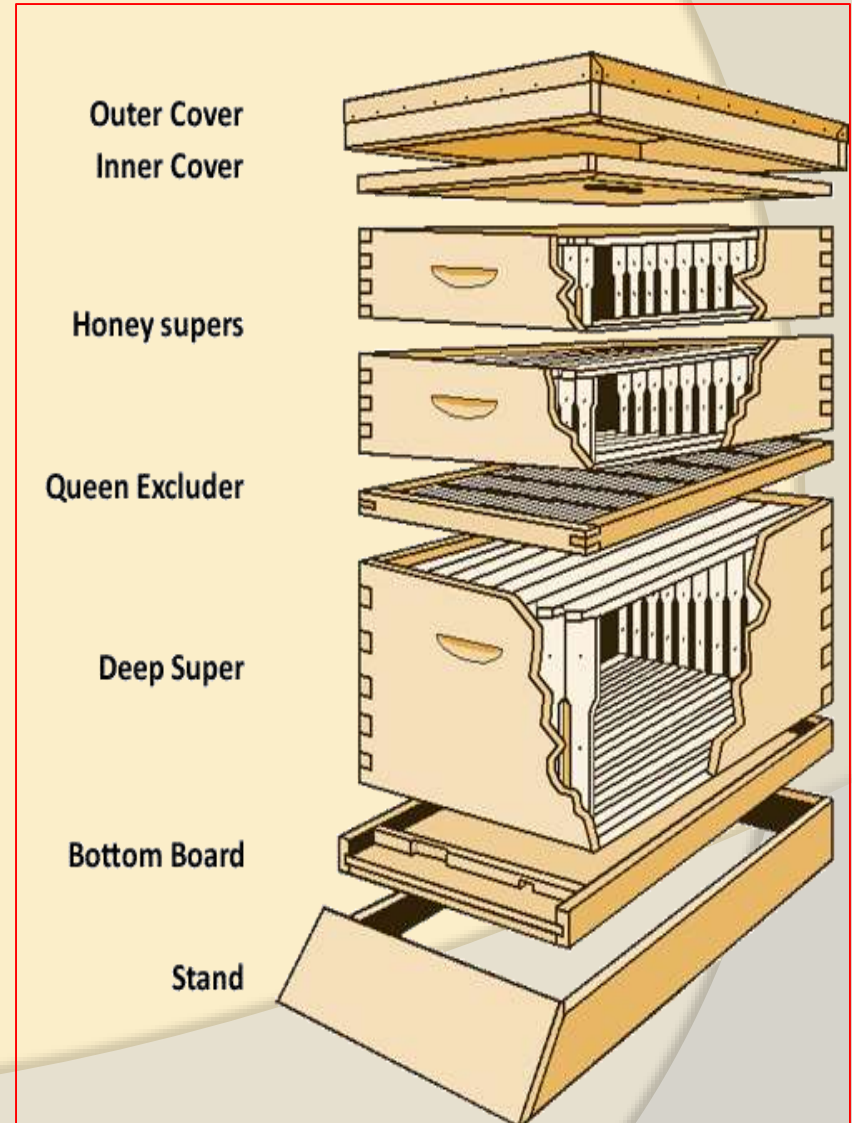


# Typical moveable hive

- ◎ Size and number of frames are variable according to the need.
- ◎ The perforation size of zinc sheet is only 0.375 cm but the thorax of queen is 0.43 to 0.45cm so queen cannot pass through the pore.

# Parts of typical moveable hive

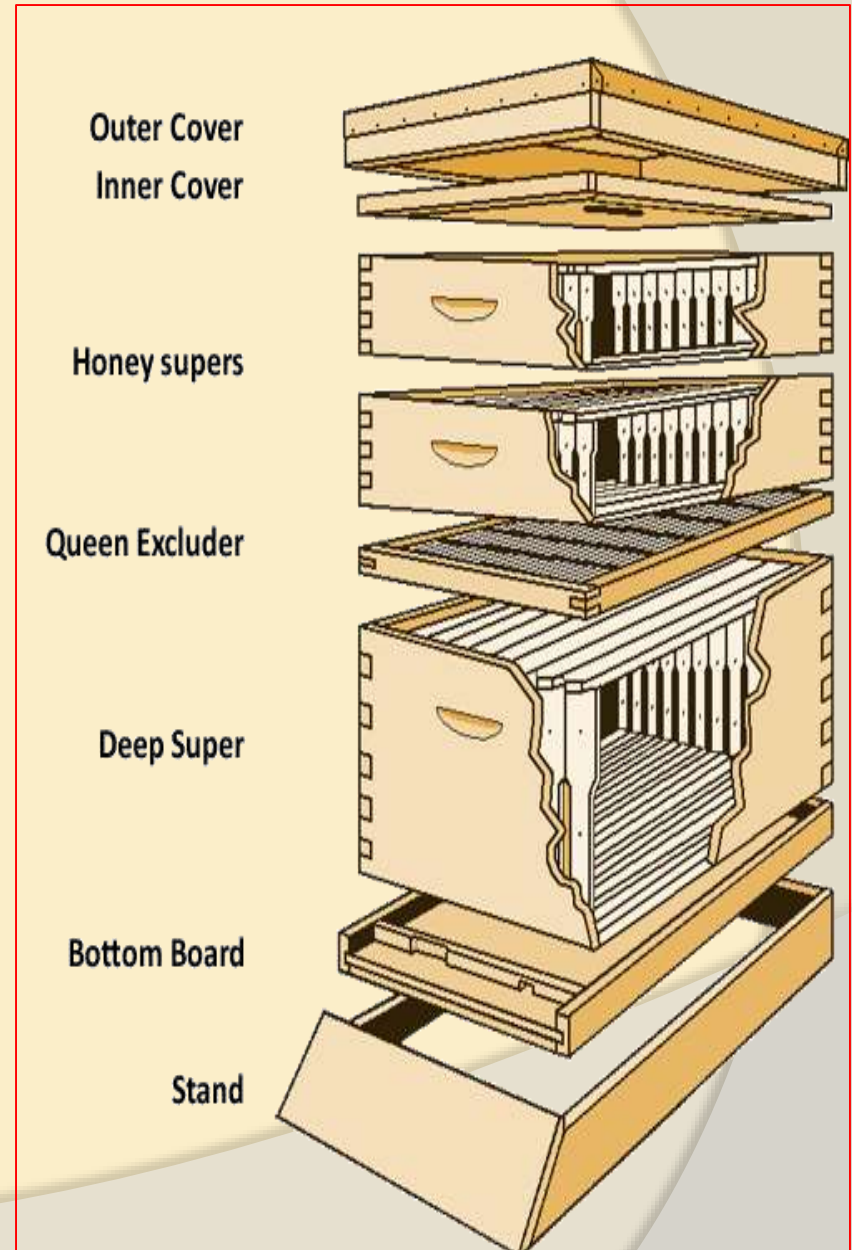
- a) **STAND**: basal part of hive.
- It is adjusted to make a slope so that rainwater comes down quickly.





## b) **BOTTOM BOARD:**

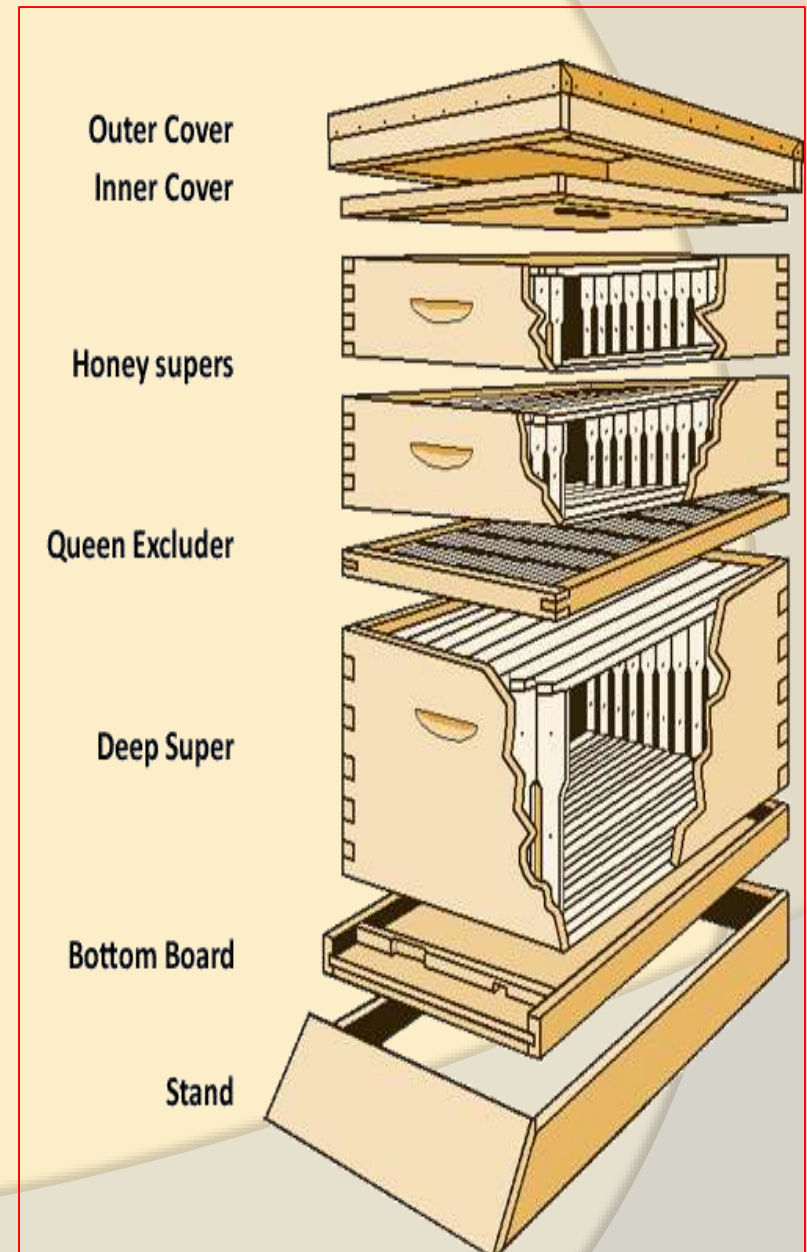
- Situated above the stand and forms the proper base. It has two gates one gate is for entrance and other is for exit.



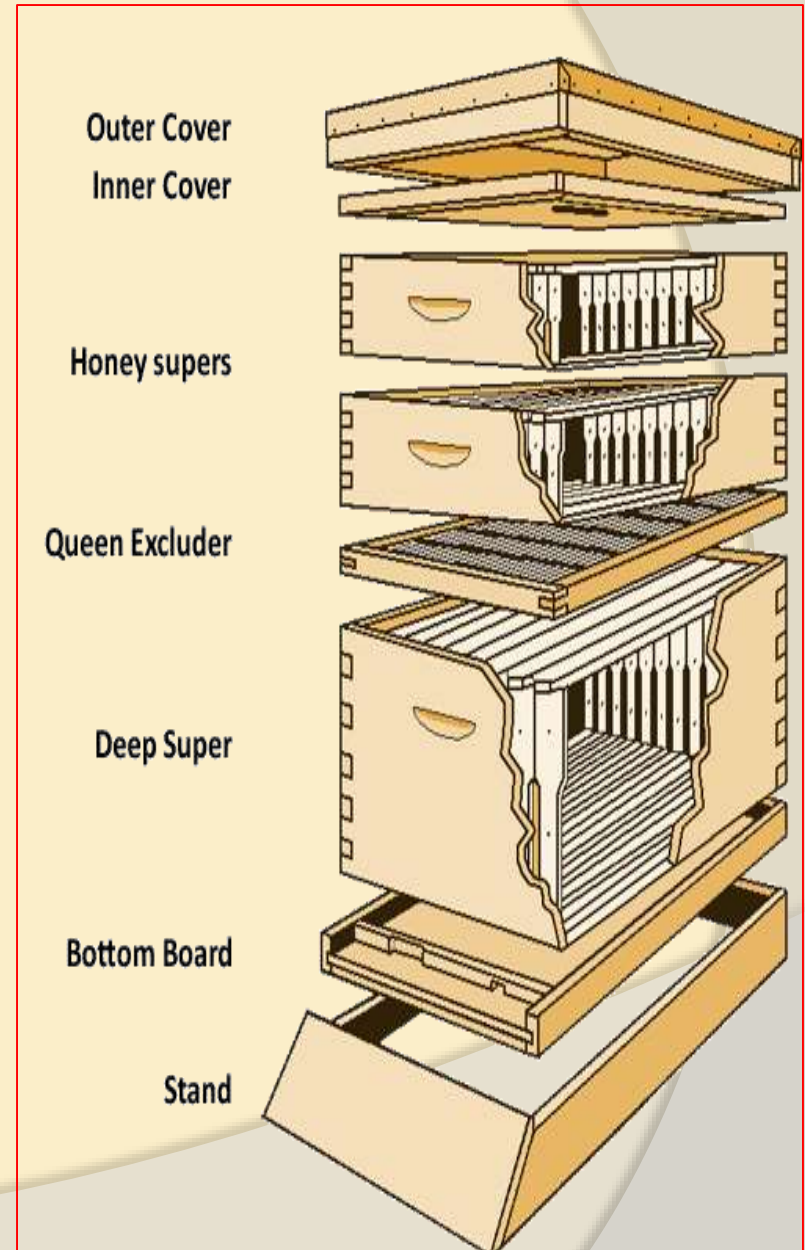
## c) BROOD CHAMBER:

Most important part provided with 5 to 10 frames.

- In each frame a wax sheet is held at vertical position where bees start making walls and cells.



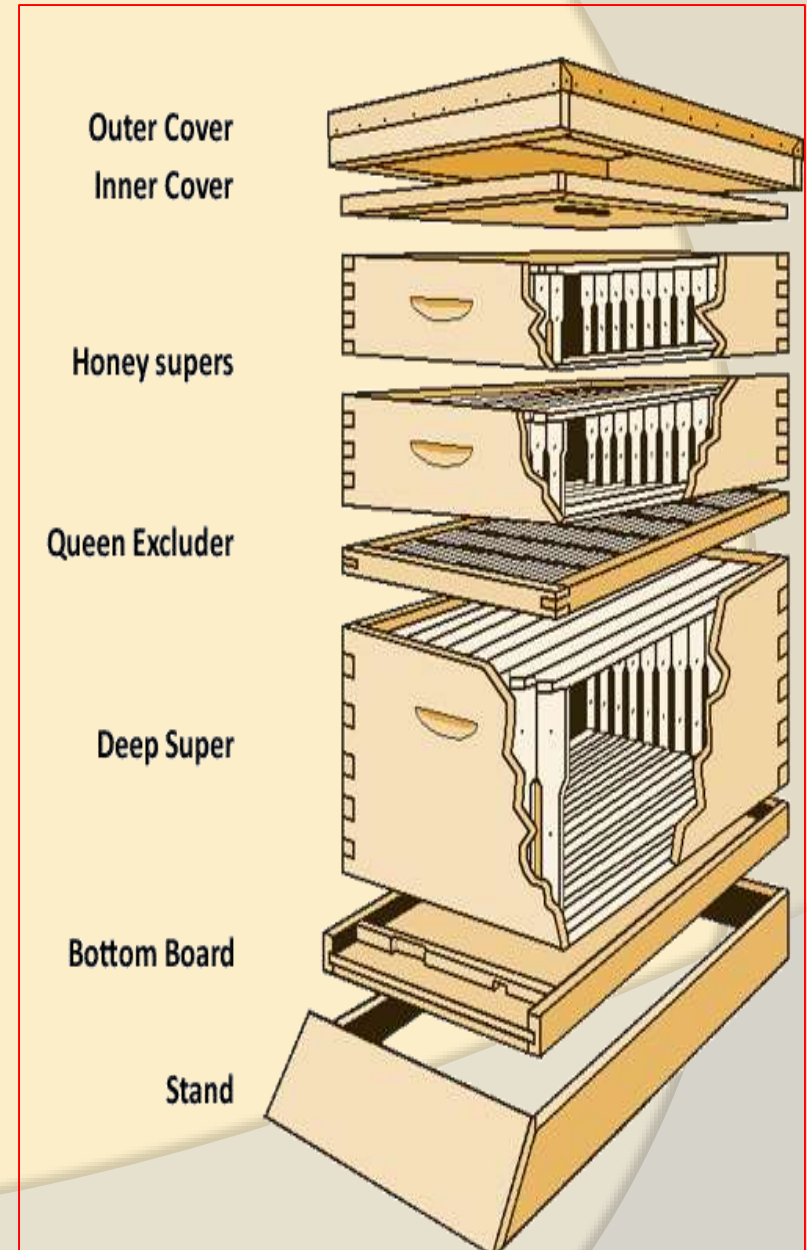
- d) SUPER:** It is without cover and the base.
- It is provided in many frames containing comb foundation to provide additional space for expansion of the hive.



## e) INNER COVER:

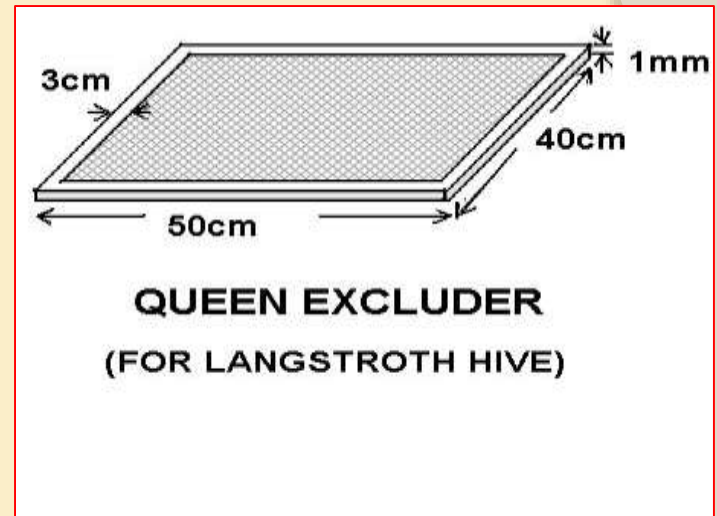
- Wooden piece used for covering of the super, has many holes for proper ventilation.

f) **TOP COVER:** plain and sloping zinc sheet fitted on it protect the colony from rain.



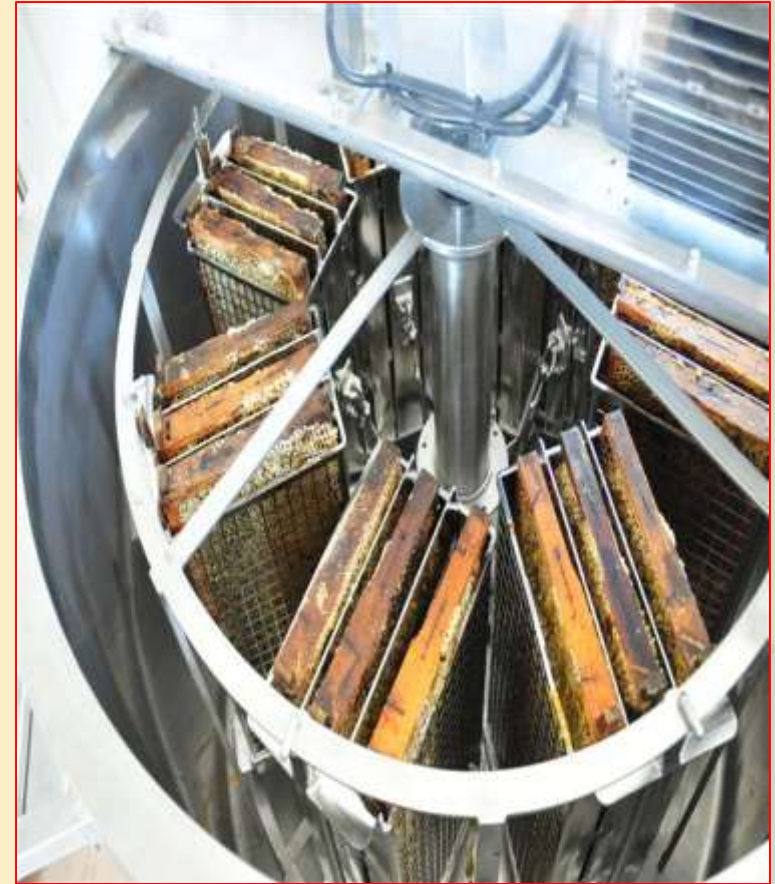
## 2. QUEEN EXCLUDER

- Consists of wire gauze, extraneous guards and drone traps.
- Workers can pass through it but queen cannot.



# 3. HONEY EXTRACTOR:

- ❑ It functions on principle of centrifugal force.
- ❑ By centrifugation , pure honey is thrown out without any damage to the comb.



# 4. UNCAPPING KNIFE:

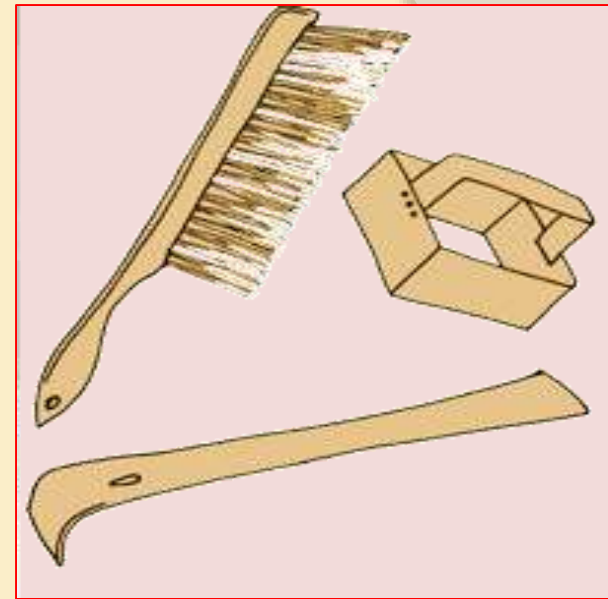
- Honey filled combs are sealed by wax which is removed by heated



**Electric Uncapping Knife**

**For uncapping all sizes of frames.**

# 5. OTHER EQUIPMENT



- Some materials like protective garments, gloves, net veil, bee net, brush etc are required for easy and well planned handling of bees.

**Beekeeping suits**

Clothing is made from 100% cotton.  
Available in sizes from S to XXXL.  
Easy to wash (after detaching the hat, clothes are machine washable).

- Detachable hat  
- Poly reinforced back mesh  
- Very good visibility  
- Double rings keep mesh away from face.
- Zipper around the top  
- Very good zipper body  
- Flat with velcro closures.
- Practical pockets adapted to the needs of the beekeeper.
- Rubber seals preventing the entry of bees under clothing.

Size Chart

Size	Height	Weight	Waist	Length
S	164	50	78	135
M	170	60	85	140
L	176	70	94	145
XL	182	80	102	150
XXL	188	90	110	155
XXXL	194	100	118	160

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# Production of honey

- ◎ **Production of honey:** It is a not direct plant product because the nectar, pollen and cane sugar bearing secretions of flowers are ingested by honey bees and get mixed with the saliva and undergo certain chemical changes due to enzyme action.

- ◎ Some ingredients are added to the mixture and reduce the water content
- ◎ The whole mixture is collected in the honey sac until it reaches the hive.
- ◎ Honey is concentrated by a strong current of air produced by the rapid beating of worker's wings, crawling over the cells.

# Chemical Composition of honey

Levulose	: 38.9%
Dextrose	: 21.3%
Maltose	: 8.81%
Enzymes and pigments	: 2.21%
Water	: 17.2%
Ash	: 0.2%

# UTILITY

## ◉ FOOD VALUE-

Used in the formation of candles cakes and bread.

## ◉ MEDICINAL VALUE-

It is laxative, antiseptic and sedative and used in Ayurvedic and unani medicinal systems.

➤ Act as a curative of ulcers on tongue and alimentary canal.

➤ Typhoid germs are killed by it.

## **OTHER USES-**

It is used as preservative, in brewing industry, in poultry and fishing industries.

➤ It is used to stimulate the growth of plants, the bacterial culture, in insect diet.

# CONCLUSION

- Production of honey has been the major aim of the industry.
- Modern beekeeping also includes production of beeswax, bee collected pollen, bee venom, royal jelly, propolis, as also of package bees, queen bees and nucleus colonies.
- About 10,000 tons of forest honey are produced annually

**THANKYOU**

