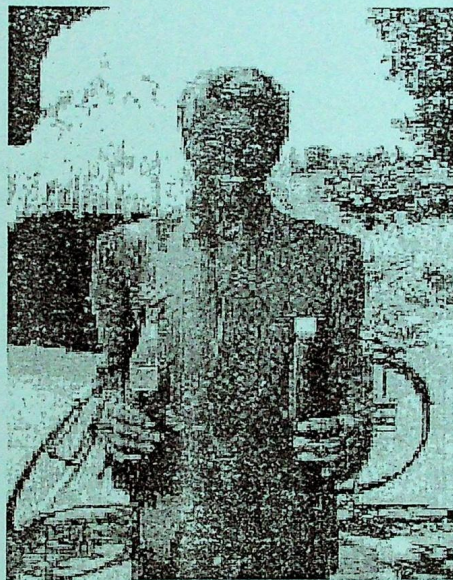


APIARY CAN MAKE MONEY.



September 2009

WHAT IS APIARY.

Apiary is the keeping of bees so as to money from its products and help us pollen our crops. Beekeeping is an activity for both men and women.



Both men and women can get involved in beekeeping.

WHY IS APIARY IMPORTANT?

Apiary is important because we can:

1. The sale of honey provides a good income
2. Honey is a food rich in sugar and vitamins
3. Bees are important for pollinating plants



A bee is in the flower

4. Bees can increase the yield of plants (such as sunflower) they visit



Plants which bees visit and can increase their yields

Therefore each field or orchard should have a beehive to ensure good pollination.

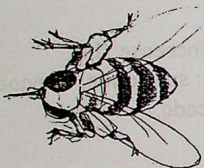
It has been found out that bees increase the production of the following crops: sunflower, mangoes, egg plants, cotton, pumpkins, avocado.

WHAT IS INVOLVED IN APIARY?

THE BEES.

Bees are social insects which live together in a colony and supporting each other. The bee colony is made of three types. There is:

1. Workers

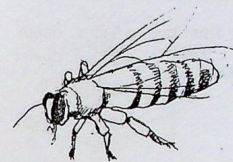


The workers are females bees which have hatched from the eggs which fertilized. But they are not able to lay eggs. They are very active and perform the following activities:

- Guarding the hive

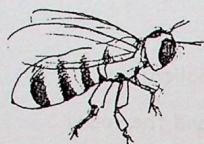
- Cleaning the hive
- Ventilating the hive
- Making wax
- Collecting the nectar and pollen
- Feeding the queen, drone and the young

2. The Queen



The queen is also hatched from fertilized egg. It is fed on a special diet called royal jelly. She is the largest bee. Her abdomen is 18 to 20 mm long and it is brown or yellow in colour. It is also the only female bee which can lay eggs. She keeps the colony going.

3. The Drones



These are the male bees. They are hatched from non fertilized eggs. They are larger than the workers. Their only work is to fertilize the queens.

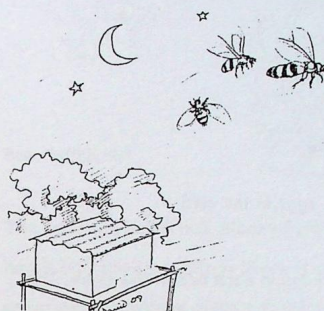
NOTE

When the drones become many, it shows that the colony is old.

REPRODUCTION

The queen and the drones fly out of the beehive to mate. This is the mating time. It allows fertilization to take

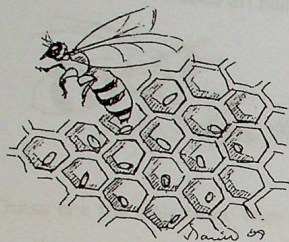
place. The queen will mate with more than one drone depending on how much fluid its abdomen can hold.



The mating takes the place at night and it will be within the radius of about 3 kms and from 10 to 30 ms above the ground.

After the mating, the queen will fly back to the beehive. The drones die after mating and those which did not get a chance to mate will be killed by the workers. They will not be allowed back to the beehive.

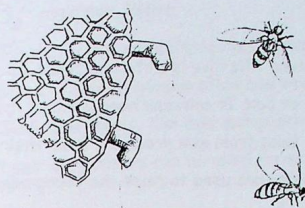
Laying the eggs.



The queen laying the eggs in the cells

The queen will lay an egg in each cell in the comb. The workers will monitor the egg, until a time it will hatch. The workers feed the new larvae up to the time of pupation. The workers will then cover the comb.

The eggs are hatched out.



Bees hatch out

The eggs will hatch out. Most of the fertilised eggs will hatch into workers. When there is a need for new queens, some workers will be given a special feed, the royal jelly and they will develop into the queens. If a new queen is allowed to hatch out, then the colony will divide,

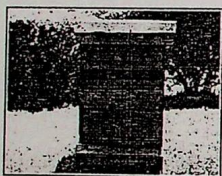
BASIC EQUIPMENT

There are many equipment required for bee keeping. A few of them are:

1. Bee Hives

Honey bees live in hives. The hive is a storage space, such as a hollow in a tree or box. It contains honeycombs. These are made by worker bees from wax produced from their bodies. The honeycombs are used to raise the young bees and to store food. The propolis used to repair cracks in the hive, is collected from certain trees.

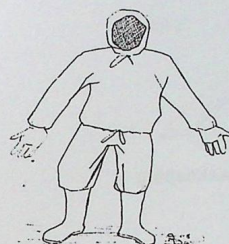
There are improved beehives. The available ones are from Kenya, called Kenya Top Bar (KTB) Beehives. There are also modern beehives called Langstroth



The modern Langstroth Beehive

2. Protective Ware

The protective ware allows the beekeeper to protect him / herself from dangerous bites and work easily with bees calmly and safely. The bee suit protects against stings. A pair of trousers can be used for the bottom half.



A person in a recommended complete protective ware.

3. Smoker.

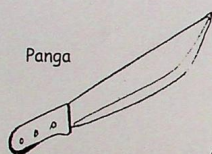
Smoker is used to prevent the bees from stinging. It is best to purchase one with a fairly large firebox, so you do not have to keep topping it up. The fuel for the smoker should be slow cool burning materials. They can then be

kept under control during manipulations. Remember each bee that stings dies.

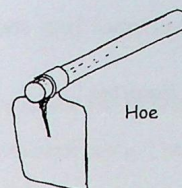


A smoker

4. Other useful equipment for Beekeeping

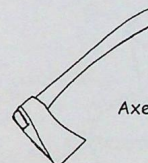
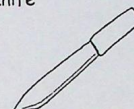


Panga

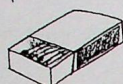


Hoe

Knife



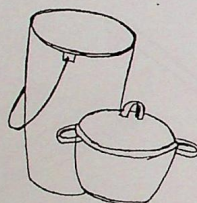
Axe



March box



String



Tight lid container

Site selection and location

When selecting a site for beekeeping, there are two things which are necessary. They are:

1. The forests (trees)



A beehive placed in the forest

Forests are important for bees because:

- The forests produce flowers providing the bees with food of nectar and pollen

- They provide a quiet place for the hives, away from human activity which may cause the bees to be aggressive
- Children and livestock are less likely to be stung
- The beekeepers can move away from the hive without being followed by bees
- The forests provide bee with shade and they reduce the effect of wind.

There are two types of forests,

- There is natural
- There is planted.

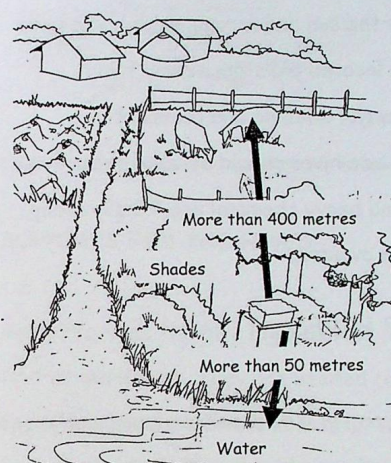
The bees prefer natural forests

2. Water

Water is important for bees because:

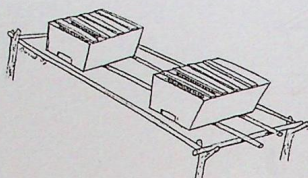
- It is used to thin down the capped honey for feeding

- It is also used for cooling the hive in the hot weather.



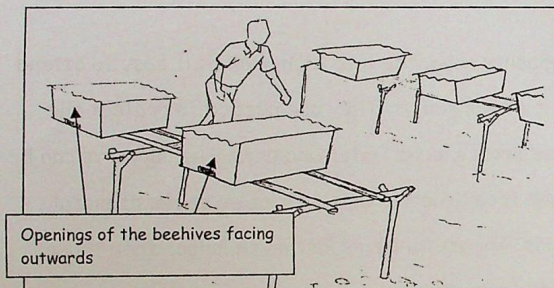
Placing the beehive to the established farm.

It should be noted that, if the hive is far from water source, it is better to provide the bees with water in a container with some floating sticks so that the bees don't drown when they come to drink.



Two beehives on one stand.

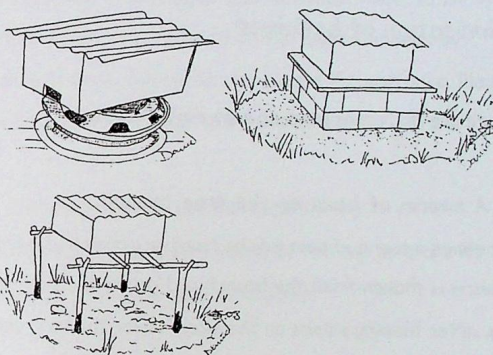
Beehives can also be placed many on different stands but the openings should be facing one side and outwards.



Many beehives placed on two stand but the openings are facing outwards

Siting the Bee Hive:

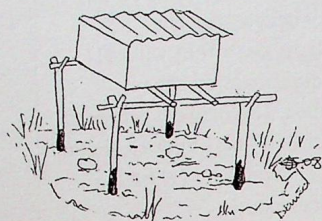
There are some main considerations when siting a hive (i) Easy access for the beekeeper. (ii) A flight path that will not annoy or concern neighbours or other members of the public. (iii) Protection from strong winds and rain. (iv) Not in deep shade from overhanging branches and (v) Firm ground with good drainage.



Beehive supports from, wheel drums, bricks, or sticks.

Method of placing Beehives

Beehives can be placed as one



Single beehive on its stand.

Colonisation of beehives

There are different ways of capturing a colony.

1. A swarm of bees on the tree branch

Sometimes a swarm of bees may be found on a branch of a tree. A swarm is shaken from the branch and it into the box or bag, after blowing smoke on the bees. Cover the box, carry and place it on a stand at the place where the colony was found.

2. A swarm of bees in a hole in the ground

A swarm may be found in a hole in the ground or in a tree trunk. Dig out the colony. The queen and should be put in the catch box to make sure the colony is properly installed. Fasten some wild combs to the top bars. Place the top bars with wild combs into the catcher box.

3. Baiting the hives

Find out where swarms of bees are most likely to fly by. Bait the have or catcher box to attract the bees by rubbing wax on the inside and around the entrance. Place the box near the water in a forest area.

4. Dividing already established colony

A well established colony (most of the top bars are having combs built on them) can be divided.

Place a well established bee hive next to an empty one, with their openings facing a way from the farmer.



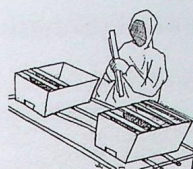
A farmer removing cover from empty hive placed next to established one

Starting removing top bars having combs built on them and placing them on the empty hive.



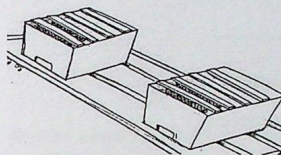
A farmer removing combed top bars to the empty hive.

Place little wax on other top bars to help bees start building their combs and divide them among the two hives. The transferred bars with well established combs should be placed to the hive entrances in both cases.



A farmer balancing combed top bars to the empty hive.

Have a balanced bee hives and cover them and leave them for some time for the bees to settle



A well balanced bee hives with combed top bars.

5. Transferring a bee hive.

It is sometimes necessary to move a bee hive. It could be too close to road; house or ants are attacking it

It is important to note the following:

- Wait until it is evening around 7.00 o'clock.

- Smoke the entrance a little ,to drive the guard bees inside.
- Block the entrance with a tissue or piece of cloth



Piece of tissue blocking the bee hive entrance

A bee hive with a blocked entrance

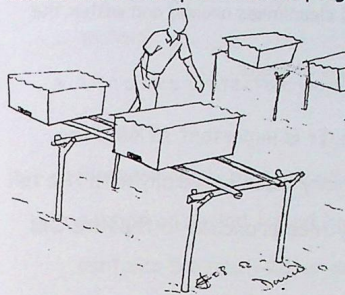
Place the hive in appropriate place



A bee hive with placed in appropriate place.

Colony Management.

Regular visits to the apiary site are important as they enable the beekeeper to follow progress of the hive.



A farmer inspecting his bee hive site.

When inspecting the hive, there are 4 things to look four:

1. The queen is present and checks that eggs are being laid. But prevent swarming by breaking down any queen cells seen
2. The combs are being built along the top bars.
3. The presence of pests.
4. Make sure the hive is clean inside and outside.

There are several things indicate that the hive is in good order:

1. Eggs are laid in the combs.

2. Combs are well built on top bars
3. There is provisions for pollen and honey
4. There is general cleanliness around and within the hive
5. There are no signs of pests

Keep the apiary clean. It is important to keep the surrounding of the apiary clean especially with the tall grass and the near by tree branches to the hive and its stand.

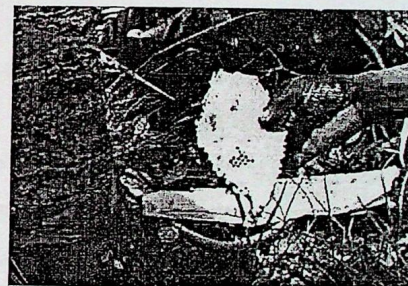
Keep some records to help know what was done and what needs to be done. Keep these records simple.

Honey Harvesting.

What should you consider when harvesting?

- Honey is present and ready to harvest when the hive becomes heavy, smells of honey and bees may have become more aggressive than usual.

- The ideal harvesting time is in the cool of dusk.
- Do not harvest honey during rainy weather as the honey draws moisture from the air and gets too watery
- Use a bee protective ware and a smoker. Never use fire.
- Harvest comb that are at least two thirds capped or sealed full of honey. Uncapped honey contains too much water and will start to ferment.



Pure honeycomb

- Cut away the light-coloured combs, leaving about 1 cm of comb for the bees to use to rebuild a new honeycomb.
- Leave the combs with brood and pollen and some honey for the bees to eat to enable future production of honey. In fixed comb hives, only take away the combs at the sides.
- Place the honeycombs into a pot or bucket that can be closed to avoid robbing.
- Always carry two clean and dry containers with sealed lids.
- Put combs with little or no capped honey into the other container.
- Keep this second grade honey for local or home consumption, as it cannot be stored for long.
- Make sure that there is no dirt in the honey.

- Sometimes more money is paid for certain kinds of honey than for a mixture so harvest this kind of honey separately.
- Avoid propolis and too much pollen in honey
- Honey presented for sale in the comb is seen to be pure and can fetch a good price, therefore only sealed and undamaged comb should be selected.

Steps of the harvesting process

- Light the smokers and put on the bee suits
- Check for combs that are at least two thirds capped or sealed full of honey. Always leave the combs with brood, large portions of pollen and some honey for the bees.
- Always hold the combs in a vertical position to avoid breaking.