

API - CULTURE.

ECONOMIC ZOOLOGY

B.S.C. PART - III PAPER - VII

API. CULTURE.

INTRODUCTION: At the one end of the ladder of animal kingdom are dreadful and deleterious animals like tigers snakes etc. while at other end are such animals whose role brings an adequate support to the human zeal.

Honey bee has been ranked as one of the most helpful insect whose miraculous contribution is illuminating the world of economics as well as providing stupendous nutritive substance to the human being since the times of vedas and Ramayana.

The primitive Method of honey Collection from the hive was performed by killing bees and Cutting.

The honey collected in this manner was not pure. This crude Method of honey Collection has been removed by modern technique of rearing and collection. This is called apiculture.

TYPES OF BEES:- There are four species of genus Apis used for bee keeping in the world today. They are Apis dorsata (Rock bee or Sarang), Apis florea (Little bee or Bhunga), Apis indica (Indian bee or Khani) and Apis mellifica (European honey bee). First three species are found in India and fourth one is found in Europe and America.

CULTURE OF BEE I-

A. dorsata is the largest honey bee in India. It is notorious for its ferocity and tendency to make provoked. Some times fatal mass attacks on persons who approach its hives. It is a good gatherer and its single Comb may yield more than 30% honey. It is not domesticated.

Apis indica and Apis Mellifica have been domesticated abundantly. It's systematic position is:-

MEMBER OF THE COLONY:-

Gregarious numbers of bees existing in the hive can be divided into three categories - Worker (sterile female), drone (male) and the Queen (female). Different functions are assigned to different individuals. This division of labour makes their life harmonious and extremely busy.

WORKER:- These are sterile female arising from the fertilized eggs laid by the queen. These smallest members of the colony are incapable of sexual reproduction and possess various adaptations for the collection of nectar and pollen. Builders among workers manufacture wax and new combs. There are store keepers and guard bees watching at the gateway of the busy but well ordered city.

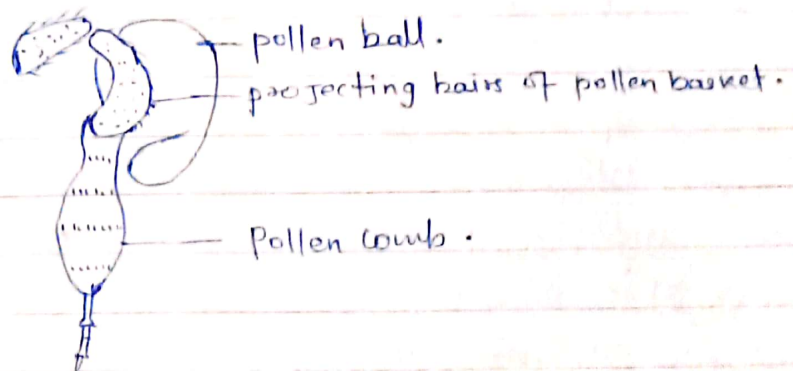
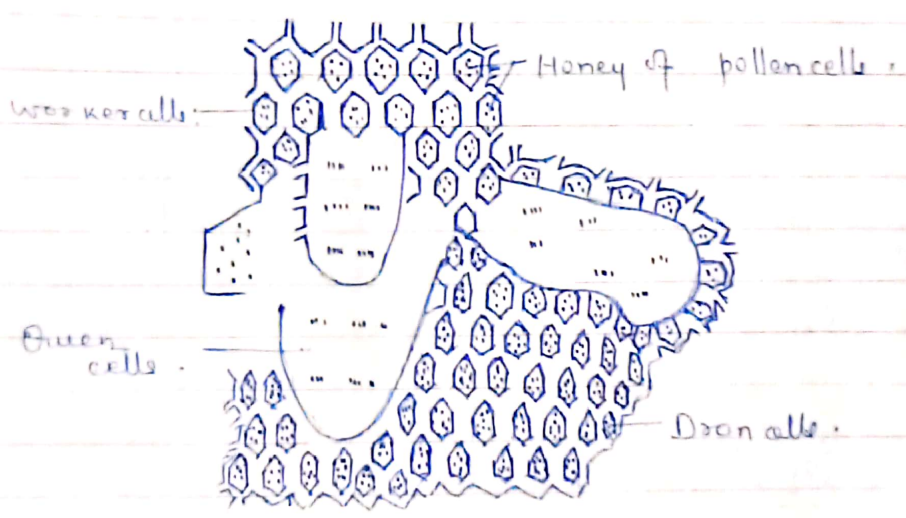


Fig:- Pollen basket on the hind leg bearing full load of pollen.

QUEEN:- The queen is the only fertile female measuring 15-20 mm in length and possesses a long abdomen extending behind the folded wings. She has pointed mandibles, short mouth parts and stings and

she is looked after with great care by the workers bees known as her 'retinue'. The mandibular gland of the queen secretes a 'queen substance' (9-oxodecenoic & enoic acid). This substance spreads over the queen's body and is further licked by the workers. In this way this substance informs the presence of queen and simultaneously this chemical inhibits workers' ovaries.

DRONE: Flying Near the hive in the sunshine can be seen the sexual male bees or drones. They are larger than the workers and smaller than the queen. They possess large eyes, small mandibles and are devoid of wax-producing glands pollen collecting apparatus. They are produced parthenogenetically and may be seen begging for honey from the workers.



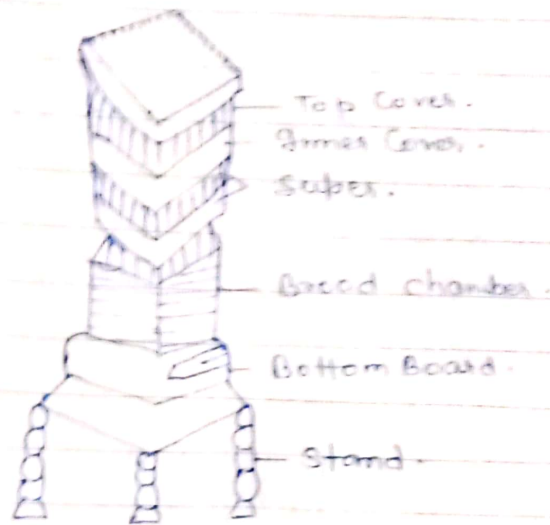
HONEY COMB OR HIVE :-

As Architects honey bees are second to none except man. The Comb is built hanging down vertically from rock building or branches of tree.

- ① The Comb consists of two layers of hexagonal cells or chambers made by the wax.

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- (i) The storage cells are usually made just beneath the top cells of the comb.
- (ii) The brood cells containing young ones occupy the central portion.
- (iii) The worker's cell is small being 5 mm across. The drone cells measure 6 mm across and the queen cells are the largest, cylindrical or vase-shaped hanging from the bottom.



ARTIFICIAL HIVE:- With the development of knowledge man has started to culture bee by formation of artificial hive. There are several hive patterns introduced in India but the most popular is the Newton Model with 7-10 frames in the brood chamber. The artificial technique can be studied under two heads:-

- (A) which bees to keep -
 - ① Bees should be peaceful in temperament and not prone to stinging.
 - ② Queen should be prolific.
 - ③ They should be good honey gatherers.
 - ④ They should be able to guard the colony.