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new combs of the hive. Repair
cover up cracks and splits
of the comb. Cleaners remove
the wastes from the cells, the
fanwers beat their wings const-
antly to ventilate the hive,
the guard bees serve as check
for intruders.

2. **THE DRONES** — They are the
idle members of the colony.
Their only function is to im-
pregnate the queen. Drones are
killed or driven out by the
workers after they have served
their purpose.

3. **QUEEN** — Queen is a specialized
and degenerate individual with
small brain. The ovaries are
very highly developed. Her only
function is to lay eggs for
the entire colony. She may
live up to three years.

Colonies are maintained
from year to year, if the
population of the hive increases
the queen accompanied by a
few workers leave the hive and
established a new colony.

FACTORS AFFECTING SOCIAL BEHAVIOUR:

In maintaining the social life the bees are governed by certain basic factors such as -

- (i) **CHEMICAL STIMULATION** — With the purpose to hold all the members of a colony together there must be a communication source in case of bees and ants there is evidence of mutual chemical stimulation. It plays a dominant role in not allowing dispersal and solitariness among the members.

The larvae are fed by workers continuously and ceaselessly until they pupate. Except to this when the workers are free from feeding the larvae they engage themselves in leaking the larva. During these two processes of feeding and leaking, both workers and larvae obtain some attractive chemical substance produced by each of them and this chemical substance is responsible for generati

of attraction and finally social habit among the members of the colony develop.

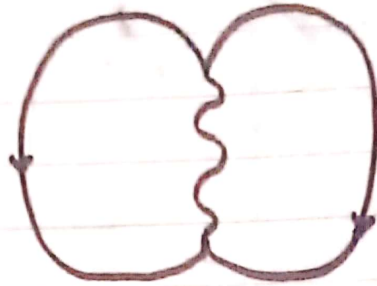
(iv) **ODOURS AS SOURCE OF STIMULATION** — The bees coming from other colony are identified by their specific smell. Similarly the death of the queen in a colony is known to all the members within an hour and they prepare for rearing a new queen.

(v) **DANCE AS SOURCE OF COMMUNICATION** — The classical studies of Karl Van Frisch about the dances performed by bees gives an interesting information. The dances performed by bee around their hive is of two types — round dance and waggle dance. According to Frisch round dance only tells about the presence of food

within the 100 metre area of the hive, and waggle dance tells about the exact position within the area of 100 metres.

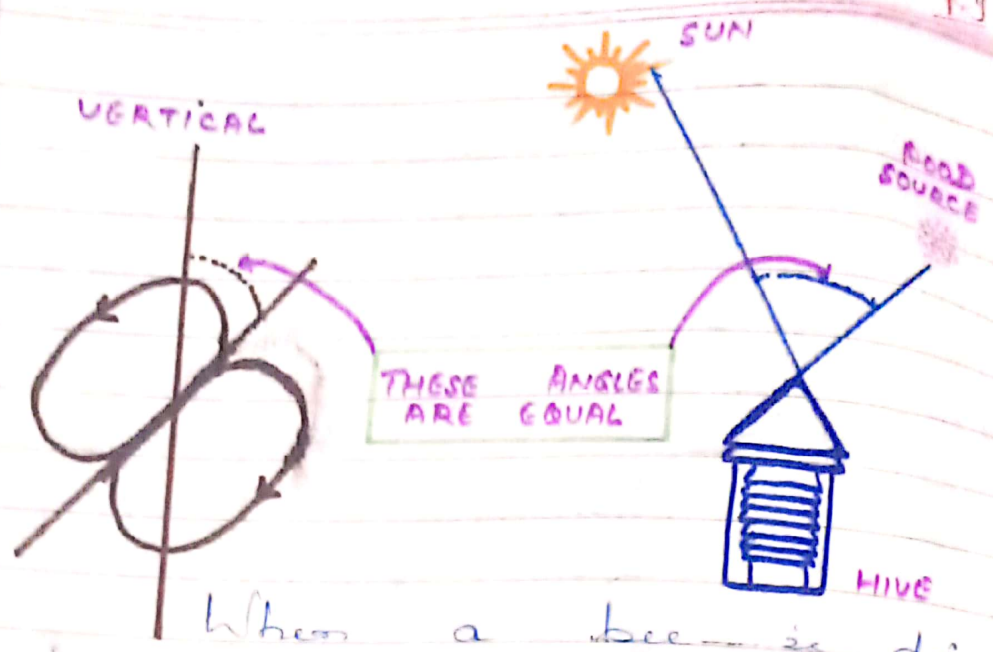


ROUND DANCE



WAGGLE DANCE

Van Fraisch claims that direction of the food source is indicated by the orientation of waggle dance generally outwagging forager performs its dance on a vertical wall in the hive. It is said that the angle between the vertical and the cross piece of the dance is equal to the angle between a line drawn from the hive to the sun and a line drawn from hive to the food source.



When a bee is doing its waggle dance, other bees cluster around in an excited manner touching it with their antennae and following. Its movement is a crude kind of way and thus they fly to food source.

(iv) **SOUND AS SOURCE OF COMMUNICATION** —

Ann Werner claims that during the period of dance a peculiar and specific sound is produced and that is related to the position of food source. It does not mean that dance is not a source of communication.