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Notes for B.Sc. part 1st,
paper 2 (A).

Question :- Write notes on the social
behaviour of an insect.

Answer :-

Many insects exhibit "social"
behaviors (e.g. feeding aggregation,
parental care of the young, and
communal nest sites). In
a broad sense, any insect
that interacts with another
member of its own species
could be called a social
insect. Insect individuals of the
same species cooperate in caring
for the young.

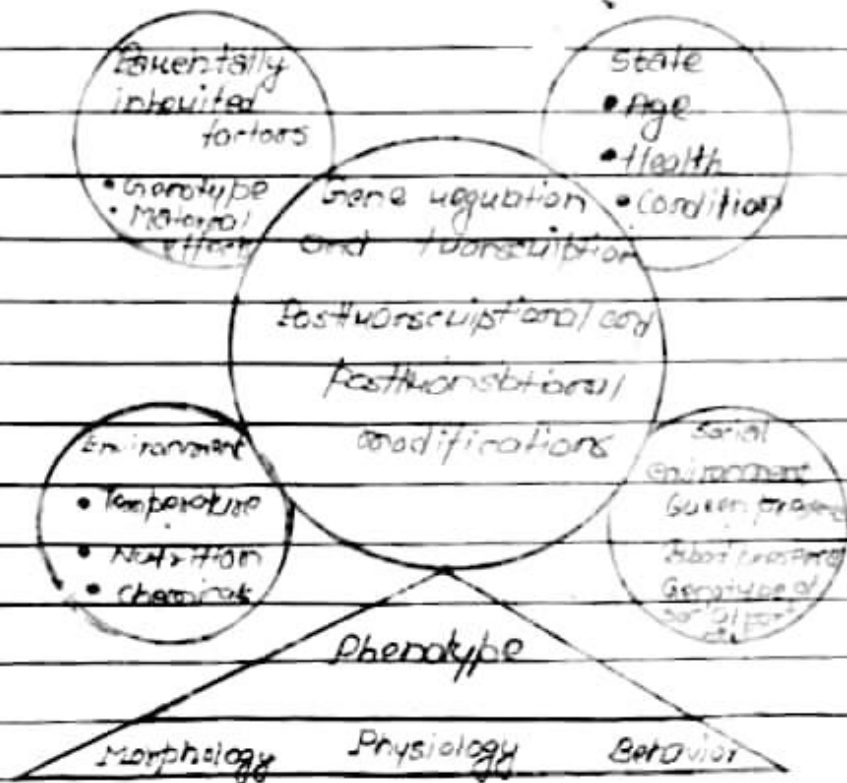
Phylum Arthropoda : social behavior
in insects :-

Introduction :-

Few animals belonging
to the order Isoptera and
Hymenoptera of class insects
exhibit social behavior. These
animals live in complex
societies and are referred to

as eusocial. Eusociality is an extreme form of social behavior found in just a few types of animals and is characterized by:

Genetics and Evolution of social Behavior in insects



1. Occurrence of polymorphic forms each assigned with a different function
2. The presence of several generations in a single hive/nest at the same time
3. Worker members of the colony which provide food and care for the

reproductives and the early developmental stages of the colony.

4. Division of labor with queens that reproduce a lot

Reproductives :- Reproductives have compound eyes and are more or less brown due to their sclerotized cuticle. Developing reproductives have wing buds, wings or wing stumps. Reproductives can be further divided into:

Alates :- They are young winged reproductives of both sexes from time to time. About 100 to 1000 alates leave the colony for a mating and colonizing flight. After mating a pair settles down at a suitable site like a knotting scar on a tree to establish a new colony.

De-alates :-

These are the alates that cast their wings after the colonizing flight and successively turn into queens

and kings. Initially only a few eggs are laid and brought up by a female de- alate.



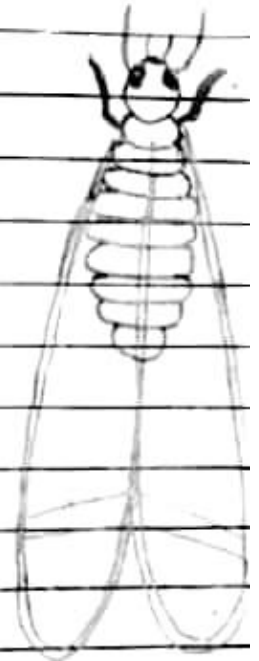
Primary queen



Male or king



Nootenic



Alate

Polymorphism (caste system) in termites

As the number of individuals in the colony grows, more workers are available to help the young queen to care for the brood.

After three to five years the number of individuals is already so large, that the colony of this pest species can turn into the damaging stage.