Class X

EXPERIMENT No:9

Aim:- To study homology and analogy with the help of preserved/available specimens of either animals or plants.

Materials Required : Specimen of turnip root, water melon fruit, bougainvillea shoot with thorn, cucurbit shoot with tendril, Figures of human hand and wing of bat and photographs of bird wing and butterfly wing.

Procedure : Take parts of plant and animal objects in terms of Homologous and Analogous organs as follows-

Homologous organs : Bougainvillea shoot cucurbita shoot

Human hand and wings of bat

Analogous organs : Turnip root and water melon fruit

Bird wing and butterfly wing

Observations :

1. Look for the point of origin of thorns in bougainvillea and tendril of cucurbit.

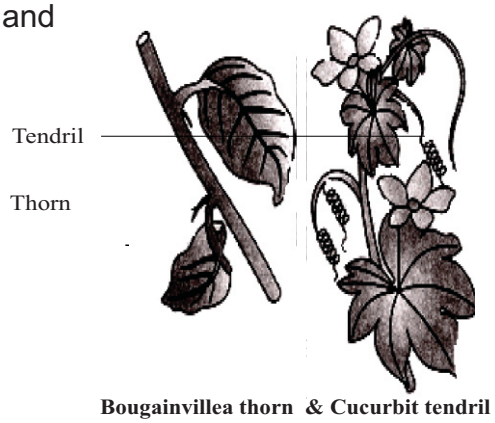
   Compare that both structures are stem.

   Feel the point and the hardness of the thorn.

   What function does it perform?

   Look the shape and tenderness of tendril.

   What function does it perform?



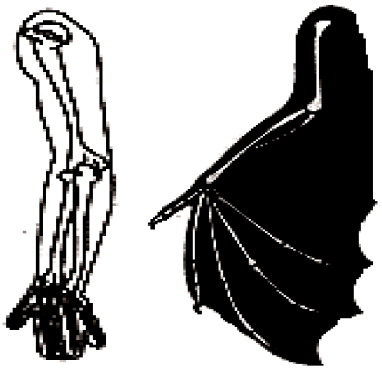
Bougainvillea thorn & Cucurbit tendril

2. Look the basic skeletal structure of human hand and bones of the bat wing.

   Compare the internal skeletal structure of wings of boot.

   How does hand help holding objects?

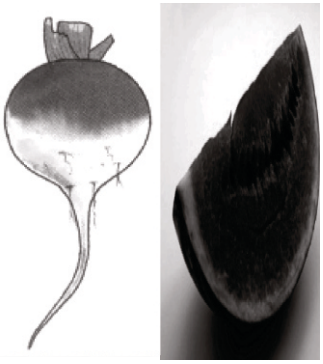
   How does wing help fly in the air?


Human hand & Wing of Bat

3. Look the shape and structure of root of turnip and fruit of water melon.

   Compare the food storing part in turnip and water melon.

   Identify that food eating part of turnip is root and food eating part water melon is fruit.



Turnip root & Watermelon fruit

4. Look the basic structure of wing of bird and wing of butterfly.

   Compare the fine structural details of wings of bird and butterfly.

   Observe different types of feathers found on the wing of bird.

   Try to identify the scales present on the wing of butterfly.

Wing and feather of bird & Butterfly wing

Precaution :

1. Be careful while touching thorn of bougainvillea.
2. No damage should be done to either bird or butterfly.