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Class : 12th

Unit : 1; (Sexual Reproduction in plants)

Chapter : Pollination (Continued)

Topic : Cross-Pollination (Continued)

Lecture No. - 03

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Cross Pollination : Biotic means

(iii) Entomophily :

It is the most common type of cross pollination in which the pollen grains of ripe anther of one flower is transferred to a mature stigma of another flower through the agency of insects like moths, butterflies, wasps, bees, beetles, etc. These insects visit the flower for nectar, edible pollen grains or shelter.

Characteristics of entomophilous flower:

- Flowers are coloured for attracting pollinating insects. They are showy or brightly coloured.
- The flowers produce an odour which may be pleasant (e.g., Jasmine) or foul (e.g., Rafflesia).
- Nectar is secreted for feeding the visiting insects.
- The pollen grains are heavy and surrounded by a yellow sticky substance called pollenkitt.

(iv) Ornithophily (Gk. Ornis - bird; philein - to love).

This is the mode of cross pollination performed by birds. Only a few types of birds are specialised for this. Birds usually have small size and long beaks. Two common types of tropical pollinating birds are Sun-birds and Humming birds. Some other pollinating birds are Crow, Bulbils, Parrot and Meynah.

Ornithophilous plants are very few as compared to entomophilous plants.

Common bird pollinated plants are:

Bombax, Erythrina, Bignonia, Agave, Gravillea etc.

Characteristics of ornithophilous flowers:

- Ornithophilous flowers secrete abundant watery nectare or have edible parts.
- Flowers are usually brightly coloured - red, orange, yellow or blue.
- Floral parts are commonly leathery.

(v) Chiropterophily (Gk. cheir - hand, pteron - wing)

It is cross-pollination performed by bats. Bats are nocturnal, flying mammals which can transport pollen over long distance.

Characteristics of chiropterophilous flowers:

- These flowers secrete even more abundant nectare than other flowers.
- Pollen grains also produced in more abundance.
- Flowers are large and stout.

Examples are: Anthocephalus (Kadamba tree),
- Rigellia pinnata (Sausage Tree).

(vi) Malacophily (Gk. malakos - soft, philein - to love).

Snails ~~perform~~ mediated cross-pollination is known as malacophily. It performs pollination in Arisaema (Snake or Cobra plant) and some arum lilies.

(vii) Controlled Pollination:

In all the breeding programmes, the plants are hand pollinated to ensure cross pollination between selected varieties. This is known as controlled pollination and it is also cross-pollination.
