

Quadrant II – Transcript and Related Materials

Programme: Bachelor of Science (Third Year)

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Unit: 1. Morphology of Angiosperms

Module Name: Flower Parts- Some concepts and terminologies

Module No: 24

Name of the Presenter: Ashish Venkatesh Prabhugaonkar

Notes

Flower Parts- Some concepts and terminologies

Numerical Plan of Flower

Most flowers are constructed upon a definite numerical plan.

Trimerous flowers - flowers usually have numerical plan of three:

3 sepals, 3 petals and usually 3 or multiple of 3 stamens. Found in Monocotyledons.

Tetramerous and Pentamerous flowers - are usually constructed on a numerical plan of four or five. Found in Dicotyledons.

Flower as modified shoot or branch of a plant

This can be revealed by following facts:

Axis nature of thalamus - Flower consists of an axis known as thalamus or torus.

Generally the axis in a flower consists of short suppressed internodes and nodes.

Axis bears modified floral leaves viz. sepals, petals, stamens and carpels.

Axis in its long form is present in some flowers such as *Passiflora*, *Gynandropsis*, *Michelia*

Gynandrouos: Stamens adhering to carpels

Gynostegium: Is the fusion between stamens and stigma and it is known to be found in this family Asclepiadaceae

Gynandrophore: is the elongated thalamus in between androecium and gynoecium

Gynostemium: The column in an orchid flower, formed by adnation of stamens, style and stigma

Pollinium: Pollen grains are fused together as a single mass in two sac like structures eg. *Calotropis* and Orchidaceae

Absence of floral whorls

When both androecium and gynoecium are present in the same individual flower, the flower is called bisexual or hermaphrodite flower. When either androecium or gynoecium is present in the same flower i.e. one of the essential members is absent the flower is called unisexual flower. In neuter flower both androecium and gynoecium are absent. In nude flower either androecium or gynoecium, or both are present but calyx and corolla are absent.

Unisexual flowers

- Staminate (male)
- Pistillate (female)

The plant is called

Monoecious: If male and female flowers develop on the same plant as in Cucurbitaceae.

Dioecious: If having staminate and pistillate flowers on different plants.

Spiral or Cyclic arrangement of flower parts

In some flowers various parts may be inserted on the floral axis in a spiral manner, this resembles sepals of pine cone and the reproductive parts of buttercup flower which are considered primitive flower types. Eg. *Magnolia*

In more advanced flower types various parts are inserted in whorls, each whorl at slightly different level, and this is known as cyclic arrangement.

Number of locules within the ovary may or may not indicate number of carpels

`Compound pistil- a pistil produced by the connation of two or more carpels

An ovary having more than 1 complete cell or locule is almost always compound

Many 1 celled ovaries are also compound

A pistil having 1 celled ovary, but more than 1 placenta or more than 1 style or more than 1 stigma or any combination of these duplications, may be presumed as compound.
