



Course – BSc Botany

Semester – IV

Paper Name- Plants Systematics/BOT CC410

Topic – Principle of Angiosperm

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Principle of Taxonomy

- The Angiosperms are widely distributed with so many Morphological variation that sometimes it seems almost impossible to arrange them in systematic order
- The Angiosperms or the flowering plants are the largest and most diversified group in the plant world .
- Swingle has proposed the principle they are as follow :
- Plant relationship are up and down genetic lines and these must constitute the framework of phylogenetic taxonomy . This will naturally form a branching but not reticulated structure.
- Some evolutionary processes are Progressive while other are regressive.

- Evolution does not necessarily involve all organ of the plant at one time or in the same direction. One organ may be advancing while another is stationary .
- Evolution has generally been consistent
- In any phylum the chlorophyll bearing plants precede the chlorophyll less one saprophytes are derived from independent forms and parasites usually from the saprophytes among the lower plant.
- Usually structure with many similar parts are more primitive.
- Among seed plants the stem structure with collateral bundles arranged in a cylinder is more primitive than that with scattered bundles .
- In most group of seed plants woody members have preceded the herbaceous ones .
- In most groups of seed plants erect members have preceded the vines.
- Perennial are more Primitive than biennial and biennial are usually more primitive than annuals .
- Scalariform vessels are more primitive than vessel with round pits.
- The spiral arrangement of leaves on the stem and of the floral leaves precedes that of opposite and whole type .
- Simple leaves are more primitive than compound leaves.

- Historically leaves were first persistent and later deciduous.
- Among the seed plants the netted venation of leaves is more primitive than parallel venation.
- The many parted flower is the more primitive.
- The condition in which the perianth consist of like segments is more primitive than one in which sepals and petals are unlike each other .
- Flower with petals preceded apetalous ones , the latter being derived by reduction.
- Polypetalous flower are more primitive than gamopetalous ones.
- Regular flower are more primitive than irregular ones.
- Spirally imbricate floral parts are more primitive than those of whorled
- Hypogyne is the primitive structure .
- Numerous carpel represent a more primitive condition than United carpels .

- Separate carpel represent a more primitive condition than United carpels.
- Axile placentation preceded parietal and central placentation of ovaries.
- The presence of numerous stamen indicates a more primitive condition than that of a few stamen .
- Separate stamens proceeded united stamens .
- Evolution in Angiosperm is believed to have proceeded from seed with two seed coats to those with only one .
- The primitive seed contains endosperm and a small embryo, the advance type has little or no endosperm with a food stored in a large embryo .
- A straight embryo is usually more primitive than a curved one .
- The solitary flower is more primitive than than the efflorescence.
- Bisexual flower preceded unisexual flower.
- The Monoecious condition is primitive than Dioecious.
- Simple and aggregate fruit multiple fruits.

- In determining the closeness of relationship between two families or other group , it is usually best to compare with each other the most primitive, or basal members of each group , rather than those that are simplified by reduction or those that are most highly specialized.



Angiosperms: Flowering Plants