

Quadrant II – Transcript and Related Materials

Programme	: Bachelor of Science (Third Year)
Subject	: Botany
Course Code	: BOC 105
Course Title	: Classical Taxonomy and Phylogeny.
Module Name	: Leguminosae (Caesalpinioideae and Mimosoideae)
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Notes

Leguminosae (Fabaceae) The Pea family

Diagnostic features

The Leaves are usually compound and the leaf base is pulvinate, stipules are present. The bracts are usually caducous, odd sepal anterior. The carpel is one showing marginal placentation. The Fruit is a legume.

The Family leguminosae is divided into three sub-families - Caesalpinoideae, mimosoideae and papilionoideae

The classification of family Leguminosae - Caesalpinioideae . It is also called as the Cassia family. Following is the classification of this family.

Division	- Phanerogams
Class	- Dicotyledones
Sub class	- Polypetalae
Series	- Calyciflorae
Order	- Rosales
Family	- Leguminosae
Sub family	- Caesalpinioideae

Characteristic features

They are mostly trees, shrubs. The leaves are usually pinnate compound and the flowers are zygomorphic. The corolla is not papilionaceous and the posterior petal is innermost. The sepals are free, odd sepal is anterior. The stamens are ten, usually free in two whorls. The ovary is superior, and the carpel is one. The fruit is a pod.

Distribution - The members are mostly tropical and subtropical. In India, it is represented by many genera e.g., *Cassia*, *Bauhinia*, *Tamarindus*, *Saraca*, *Delonix*, *Caesalpinia* etc.

Habit - They are trees, shrubs, rarely herbs, mostly mesophytes and wild, many are cultivated for their beautiful flowers and timber, some are woody climbers (*Bauhinia*).

Root - tap root and branched.

Stem - is erect, woody, cylindrical, solid and branched.

Leaves - may be simple, but mostly compound. If compound they may be pinnate or bipinnate, petiolate. Pulvinus present at the base of petiole. The pinna ovate or obovate, glabrous, net veined, entire, exstipulate.

Inflorescence - is racemose, sometimes pendulous.

Flower - is pedicellate, zygomorphic, hermaphrodite, hypogynous, complete, variously coloured showy, large or small.

Calyx - consists five sepals, free or fused, often petaloid.

Corolla - consists of five petals, polypetalous, imbricate ascending that is the posterior petal is innermost in bud.

Androecium - The stamens are usually ten, free of variable length. Sometimes reduced to staminodes.

Gynoecium - is monocarpellary, the ovary is superior, unilocular, marginal placentation, style is long and the stigma simple.

Fruit - is a legume or lomentum, sessile or stalked, dehiscent or indehiscent.

The important ornamental / economical / medicinal species

Cassia fistula, *Tamarindus indica*, *Bauhinia variegata*, *Saraca indica*, *Delonix regia* and *Caesalpinia pulcherrima*

Leguminosae (Mimosoideae) is also called as the Acacia family, the classification is given below

Division	- Phanerogams
Class	- Dicotyledones
Sub class	- Polypetalae
Series	- Calyciflorae
Order	- Rosales
Family	- Leguminosae
Sub family	- Mimosoideae

Diagnostic characters

They are trees or shrubs. The leaves are usually bipinnate compound with pulvinate base. The flowers are actinomorphic, corolla is not papilionaceous and the petals are valvate. The sepals are united and the odd sepal is anterior. The stamens are many, free or connate, filaments are often long and showy. The ovary is superior and the carpel is one. The fruit is a pod or lomentum.

Characteristics

Distribution - it is exclusively tropical or sub-tropical and represented by genera e.g., *Acacia*, *Mimosa*, *Neptunia*, *Prosopis*, *Senegal* etc.

Habit - They are shrubs or trees, rarely herbs. Many are thorny, xeromorphic (*Acacia*, *Prosopis*), hydrophytes like *Neptunia*. Mostly wild, some are grown as sand binders.

Root - is taproot and branched.

Stem - is woody, erect, branched terete, solid, rich in tannin and gums.

Leaves - are alternate, petiolate, leaf base is with pulvinus, stipulate, stipules modified into thorns, compound pinnate (bipinnate), leaf movements common.

Inflorescence - is racemose, head or spike.

Flower - are sessile, actinomorphic, regular, hermaphrodite, hypogynous, complete, small.

Calyx- 5, gamosepalous, green (sepaloid), small.

Corolla - 5, polypetalous, usually pentamerous.

Androecium - indefinite stamens, conspicuous, attractive, anthers 2-celled, dorsifixed, long and slender filaments.

Gynoecium - carpel one (monocarpellary) superior ovary, unilocular, marginal placentation. style long filiform, stigma terminal, minute and simple.

Fruit- legume or lomentum and the seeds are exalbuminous.

The important ornamental/economical/medicinal species of family.

Acacia catechu - (Kattha) *Mimosa pudica*, *Albizia lebbeck*. *Acacia auriculiformis*, *Pithecolobium dulce*, *Acacia concinna* - (shikakai), *Acacia nilotica* - (babul)