

Quadrant II – Transcript and Related Material

Programme: Bachelor of Science (Third Year)

Subject: Botany

Course Code: BOC 105

Course Title: Classical Taxonomy and Phylogeny

Unit: Systematic position, diagnostic features and important plants of the family.

Module Name: Family Rubiaceae

Module No: 36

Name of the Presenter: Dr. Harshala Gad

NOTES

Systematic Position:

Division	- Phanerogams
Class	- Dicotyledons
Sub class	- Gamopetalae
Series	- Inferae
Order	- Rubiales
Family	- Rubiaceae

Distinguishing diagnostic features of Rubiaceae: Shrubs and trees. Leaves opposite or whorled, stipules interpetiolar. Inflorescence cymose. Flowers pentamerous. Stamens 5, epipetalous. Ovary inferior.

Vegetative features

Habit: Trees (*Adina*, *Neolamarkia*) or shrubs (*Ixora*, *Gardenia*), sometimes liana (*Rubia*), rarely herbs (*Galium*), very rarely epiphytic (*Myrmecodia*).

Leaves: Opposite or whorled, simple, entire or rarely toothed, stipules present and interpetiolar, sometimes foliaceous and not distinguishable from the leaves.

Reproductive features

Inflorescence: Cymose, dichasial cyme (only the central flower present in some, as in *Gardenia*), the dichasial sometimes aggregated into globose heads (*Adina*), the flowers becoming basally adnate (*Morinda* or *Neolamarkia*).

Flowers: Bisexual, usually actinomorphic or rarely zygomorphic (*Posoqueria*), epigynous, sometimes dimorphic (*Catunaregam*).

Calyx: Sepals 4-5, adnate to ovary, lobes often very small, sometimes enlarged and brightly coloured (*Mussaenda*).

Corolla: With 4-5 petals (rarely 8-10), gamopetalous, tubular, rotate or funnelform, valvate, imbricate or twisted aestivation.

Androecium: As many as corolla lobes and alternate with them, epipetalous on the corolla tube, anthers bitheous, dehiscence longitudinal, introse.

Gynoecium: With 2 (rarely 1- many) united carpels, ovary inferior, rarely superior or semi-inferior, bilocular (rarely 1 or many locules), with 1 to many ovules in each locule, placentation axile, (rarely apical or basal), nectar disc present above ovary, style slender, stigma capitate or lobed.

Fruit: A berry, capsule, drupe or schizocarpous, seeds 1-many, with small embryo, curved or straight, endosperm present or absent.

Economically important plants

Important ornamental plants: Cape Jasmine (*Gardenia jasminoides*), Flame of the woods or jungle geranium (*Ixora coccinia*), Fire bush or scarlet bush (*Hamelia patens*), Mussaenda (*Mussaenda* sp.)

Plants of economic uses: A brewed drink prepared from roasted coffee beans, the seeds of berries from species obtained from *Coffea arabica* and *Coffea canephora*. Red dye alizarin is obtained from roots of *Rubia tinctoria* known as Madar.

Plants used in medicine: Quinine a remedy for malaria is derived from the bark of several species of *Cincona*. Noni (*Morinda citrifolia*) is used widely in medicine and for treating rheumatism.