

**Vivekanand College, Kolhapur (Autonomous)**

**Department of Botany**

**B.Sc. II**

**Topic: Family Meliaceae**

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**M.Sc., Ph.D.**

# MELIACEAE



# INTRODUCTION:

Meliaceae, the mahogany family, is a flowering plant family of mostly trees and shrubs (and a few herbaceous plants, mangroves) in the order Sapindales.

They are characterised by alternate, usually pinnate leaves without stipules, and by syncarpous, apparently bisexual (but actually mostly cryptically unisexual) flowers borne in panicles, cymes, spikes, or clusters. Most species are evergreen, but some are deciduous, either in the dry season or in winter.

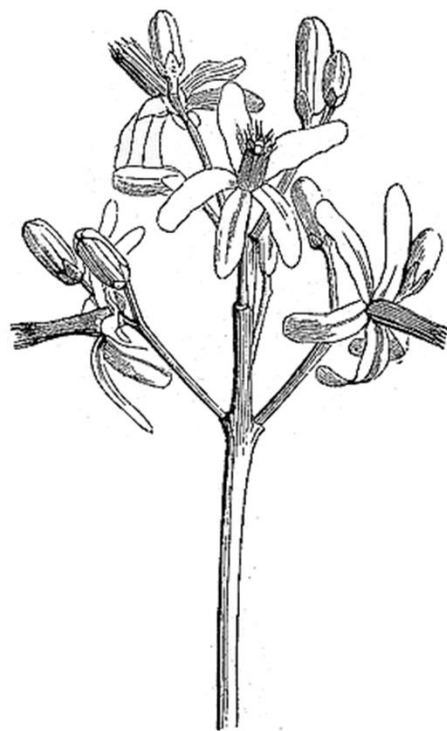


# Distribution

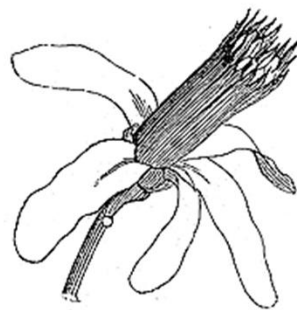
The family includes about 53 genera and about 600 known species, with a pantropical distribution; one genus (*Toona*) extends north into temperate China and south into southeast Australia, another (*Synoum*) into southeast Australia, and another (*Melia*) nearly as far north.

# Diagnostic Characters of Meliaceae:

- ❖ Plants woody trees or shrubs,
- ❖ Leaves pinnately compound exstipulate;
- ❖ leaflets asymmetrical at the base,
- ❖ Inflorescence panicles, flowers actinomorphic, hermaphrodite,
- ❖ stamens 8 to 10 forming staminal column, monadelphous, obdiplostemonous:
- ❖ annular nectiferous disc between petals and stamens,
- ❖ gynoecium pentacarpellary, syncarpous, superior
- ❖ fruits various – capsular or drupaceous.



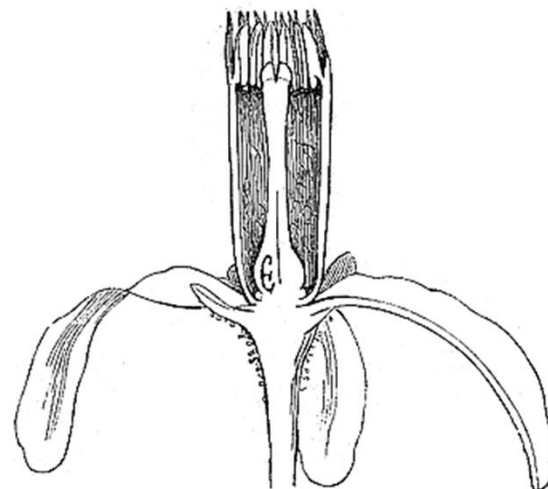
*Melia Azedarach.*



*Melia.*  
Flower (mag.).



*Melia.*  
Stamen (mag.).



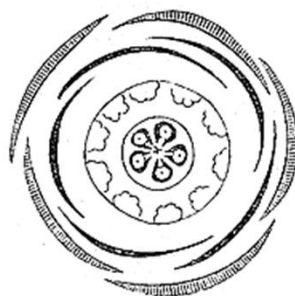
*Melia.*  
Vertical section of flower (mag.).



*Melia.*  
Fruit (mag.).



*Melia.*  
Stone (mag.).



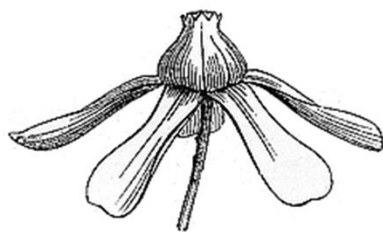
*Melia.*  
Diagram.



*Melia.*  
Seed, entire and cut longitudinally.



*Melia.*  
Pistil (mag.).



*Swietenia.*  
Flower.



*Swietenia.*  
Part of androecium (mag.).



*Swietenia.*  
Pistil, entire and cut vertically (mag.).





*Azadirachta indica*  
Meliaceae

## A. Vegetative characters:

**Habit:** Mostly woody trees rarely shrubs, often with a characteristic smell.

**Roots:** Much branched tap root.

**Stem:** Woody much branched, erect, solid.

**Leaves:** Alternate, exstipulate, pinnately compound rarely simple, without transparent dots or glandular dots, serrate margin.



## **B. Floral characters:**

### **Inflorescence:**

Cymose panicles often axillary.

### **Flower:**

Pedicellate, bracteate, complete, hermaphrodite or polygamous, actinomorphic, hypogynous, pentamerous, with a nectiferous disc.

### **Calyx:**

Sepals 4-5, small poly- or gamosepalous (connate at the base), imbricate rarely valvate aestivation, inferior.

### **Corolla:**

Petals 4-5 rarely 3 to 8, polypetalous rarely connate at the base or adnate to the staminal tube, imbricate or twisted aestivation, inferior.

### **Androecium:**

Stamens 8-10, inserted outside the base of hypogynous disc, filaments united to form a columnar tube (monadelphous; Cedrela), anthers bithecous, erect, introrse, longitudinal dehiscence, nectiferous disc present or absent.

### **Gynoecium:**

Carpels 2-5, syncarpous, superior, 2-5 locular, axile placentation, with 1-2 ovules in each loculus, single style, stigma capitate, discoid or lobed.

### **Fruit:**

Berry, capsule or drupe.

### **Seed:**

Winged, albuminous or exalbuminous.









## Scientific classification

Kingdom:	<a href="#">Plantae</a>
Clade:	<a href="#">Angiosperms</a>
Clade:	<a href="#">Eudicots</a>
Clade:	<a href="#">Rosids</a>
Order:	<a href="#">Sapindales</a>
Family:	<b>Meliaceae</b> <a href="#">Juss.</a>



Fig. 46.2. Floral diagram of *Melia*.

# PHYLOGENY:

Hallier placed the family in his order Terebinthales and considered that it is derived from Rutaceae. Both the families resembled each other in many characters viz., plants are mostly trees and shrubs, leaves exstipulate and compound, small scented flowers. Bessey, Engler and Prantl and Bentham and Hooker retained family Meliaceae in Geraniales.

Rendle has placed it as the last family of Rurales. Cronquist (1968) included this family under order Sapindales of sub-class Rosidae and class Magnoliatae. Takhtajan (1969) included Rutaceae and Meliaceae in order Rurales. Hutchinson included this family as the only family in his order Meliales.

## Economic Importance of Meliaceae:

The family is not of great economic importance.

### 1. Oil:

The seeds of *Melia azadirachta* (H. Neem) yield the 'margossa' oil of commerce. The oil is used in soap industry and medicinally in rheumatism and skin diseases. The oil of *Carapa guinensis* is used as an illuminant.



## 2. Medicines:

Almost every part of *Melia azadirachta* possesses some medicinal properties. The bark is a bitter tonic, astringent and antiperiodic. The bark, root bark and young fruits are used as a tonic antiperiodic and alterative. Leaves are used as poultice and applied to boils, the twigs as tooth brushes.

Decoction of leaves is antiseptic and used to wash ulcers and eczema. The oil is used in rheumatism and skin diseases. Dry flowers are used as a tonic and stomachic. It is blood purifier.

The bark of *Cedrela toona* is used as astringent, tonic and antiperiodic in chronic dysentery.





### 3. Timber:

The wood of *Cedrela toona* (H. Tun), is used for furniture, carving and also for cigar boxes. The *Swietenia mahoganii*, *Khaya senegalensis* produce cabinet wood.



#### 4. Ornaments:

Some of the plants viz., *Melia*, *Amoora*, *Swietenia* are grown in gardens.

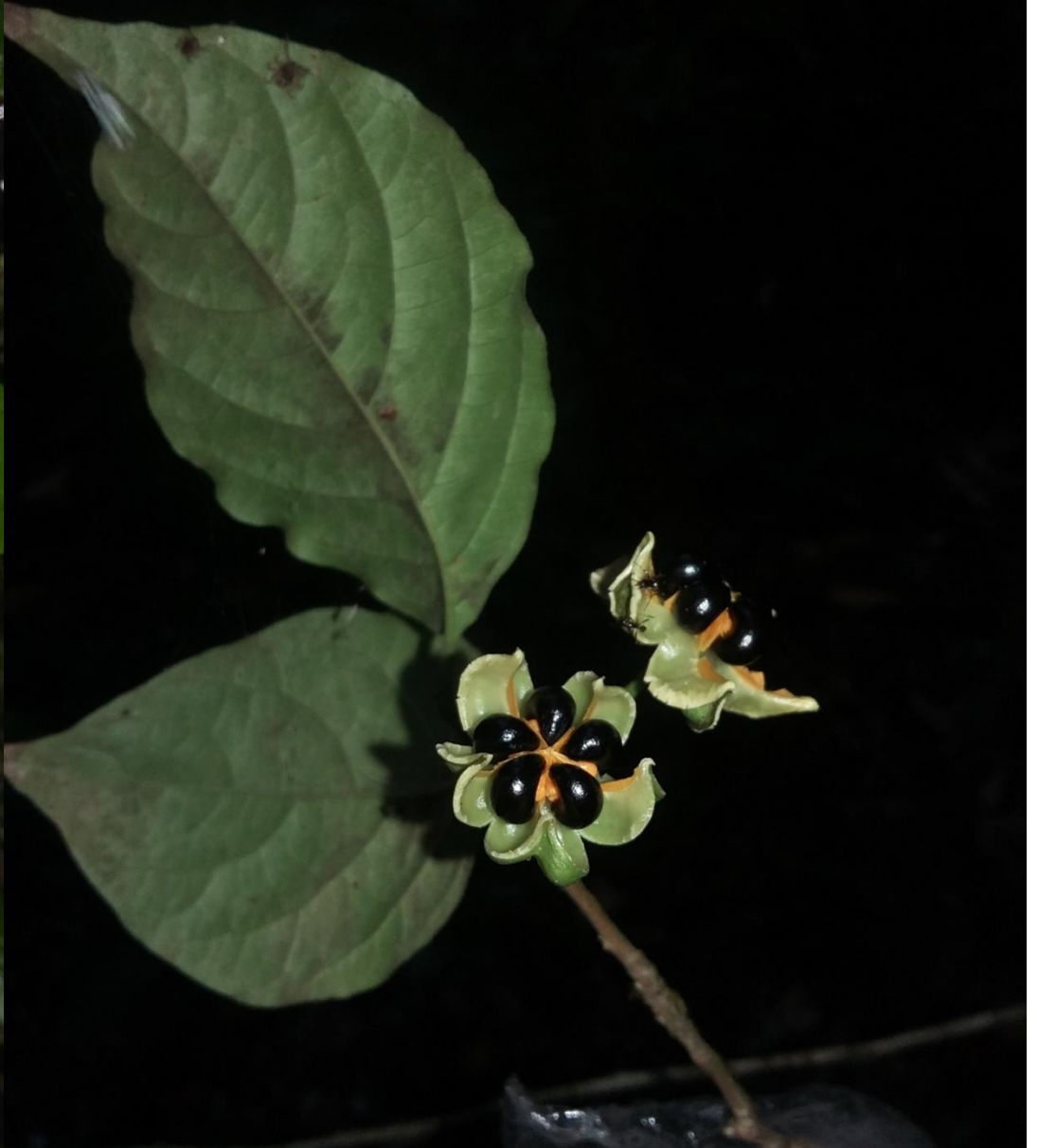




*Turraea villosa* - Meliaceae



*Turraea villosa* - Meliaceae  
Tilari Nagar (Kolhapur)



*Walsura trifolia* - Meliaceae

Locality : Karul ghat, Konkan, Maharashtra

