

## Lecture 3

### Fruit and Seed

The ripened ovary forms a fruit of variable shape, called legume or pod. Some seeds shatters – dehiscent e. g *Macroptilium atropurpureum* and *Centrosema pubescens* while some are non-dehiscent e. g *Crotalaria* spp. Pods can the reserve food is stored in the cotyledons. Pods can be glabrous or covered with hairs. Each seeds is enclosed in the testa or seedcoat. Hilum marks place of attachment o the ovary walls. The legume seed has no endosperm.

### Growth habit

1. Bush – type – a central stalk with side branches appearing along the main stem and with axillary branches developing *Cajanus cajan*; *Desmodium tortuosum*.
2. Bunch – type- a single crown from which several stems and new tillers arise, making it difficult to identify a main stems, stems can be erect or decumbents e. g. *Stylosanthus guianensis* and *Medicago sativa*.
3. Creeping – the stems trail over the ground surface e.g *Calopogonium mucunoides*, *Macroptilium atropurpureum*, some vigna spp.
4. Scrambling – many of the creeping plants climb onto and grow over upright objects. Some are also twining and encircle upright objects e. g *Centrosema pubescens*, *Pueraria phaseoloides*.
5. Rosette - a vegetative form of some perennials developed after flowering or the onset of cool weather e. g *Medicago sativa* and *Trifolium pratense* at the higher elevations of the tropics.

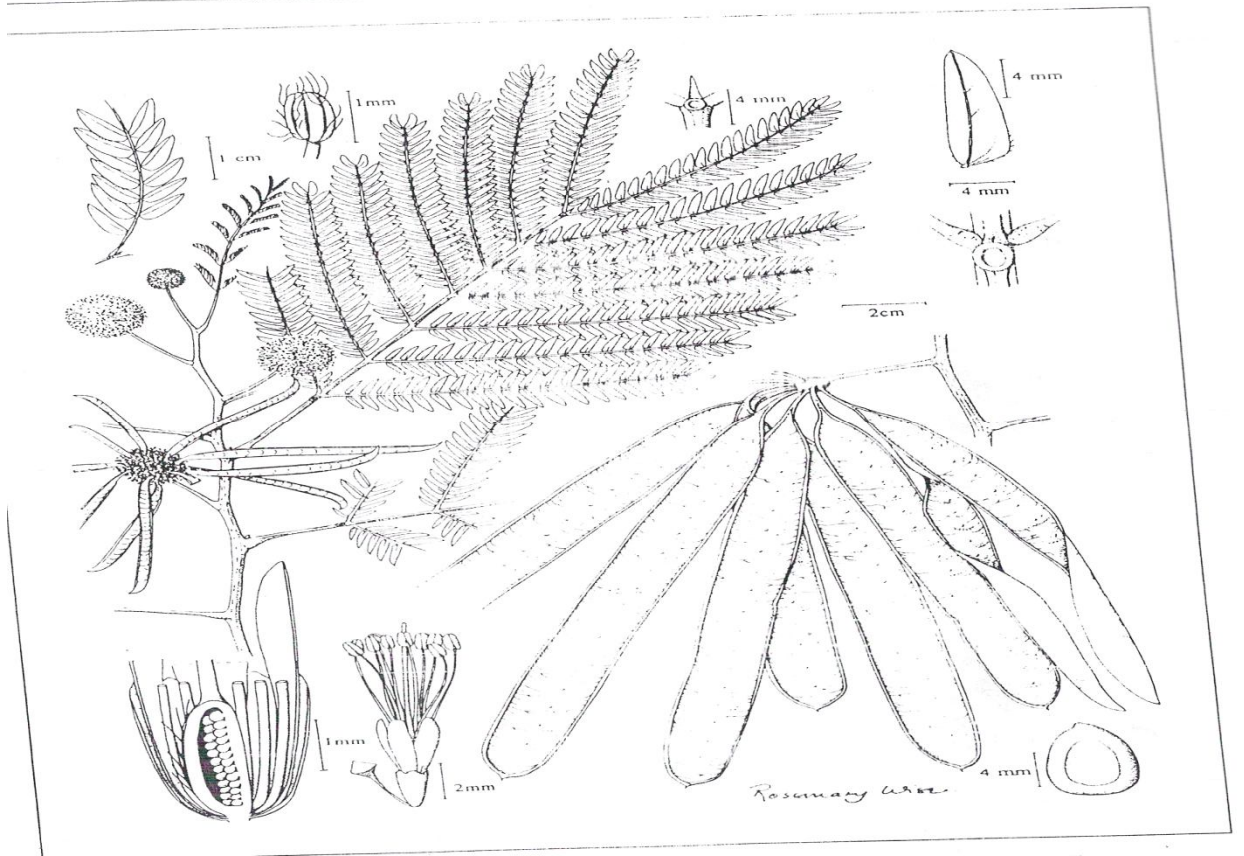
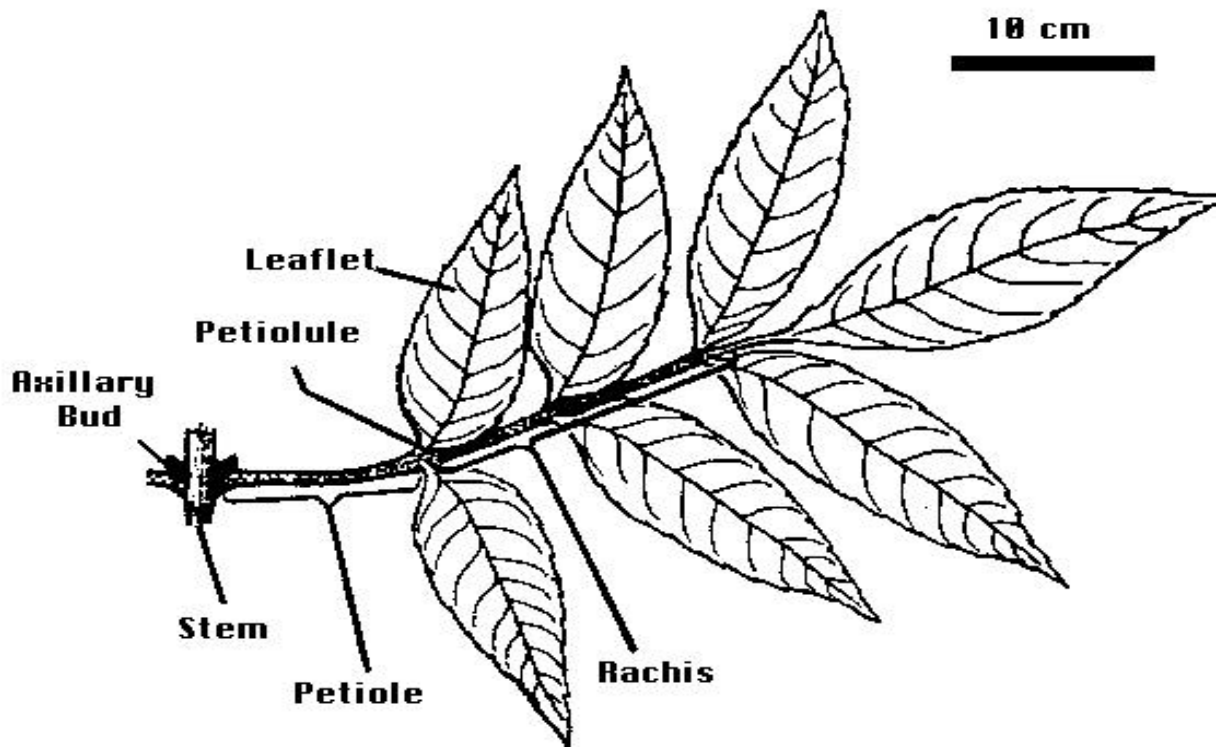


Figure 42 *Leucaena leucocephala* subsp. *glabrata*

<b>Pinnately Compound Leaf</b>	<b>Branch Bearing Simple Leaves</b>
1.It never bears a terminal bud.	It always ends in a terminal bud.
2.It arises from a node.	It develops in the axil of a leaf.
3.Leaflets have no axillary buds.	The leaves borne on a branch have bud in their axil.
4.The rachis of a compound leaf has no nodes and internodes.	The branch bearing simple leaves is always provided with nodes and internodes.
5.Stipules, if present, are seen at the base of the compound leaf, not at base of leaflets.	Stipules, if present, are seen at the base of every leaf.

## Pinnately Compound Leaf (ash)



Botanically, the term describes an arrangement of discrete structures (such as leaflets, veins, lobes, branches, or appendages) arising at multiple points along a common axis. For example, once-divided leaf blades having leaflets arranged on both sides of a "[rachis]" are 'pinnately compound' leaves. Plants with pinnate leaves are sometimes colloquially called "feather-leaved".

'paripinnate': pinnately-compound leaves in which leaflets are born in pairs along the rachis without a single terminal leaflet; also called "even-pinnate".

'imparipinnate': pinnately-compound leaves in which there is a lone terminal leaflet rather than a terminal pair of leaflets; also called "odd-pinnate".

'bipinnate': pinnately compound leaves in which the leaflets are themselves pinnately-compound; also called "twice-pinnate".

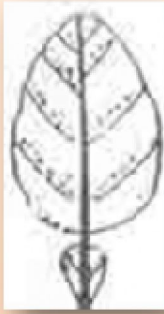
'tripinnate': pinnately compound leaves in which the leaflets are themselves bipinnate; also called "thrice-pinnate".

'tetrapinnate': pinnately compound leaves in which the leaflets are themselves tripinnate.

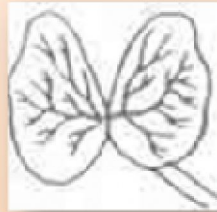


### **Palmately compound leaves**

- Based on the type of leaf blade (lamina) leaves are classified into two types namely simple leaves and compound leaves. All leaflets of a compound leaf are borne on common axis and lack axillary buds in their axils.
- In palmately compound leaf all the leaves are attached at a common point i.e. the tip of petiole. This leaves are into three or more lobes (leaflets) and appears like the fingers from the palm of a hand.



**Unifoliate palmately compound leaves**



**Bifoliate palmately compound leaves**



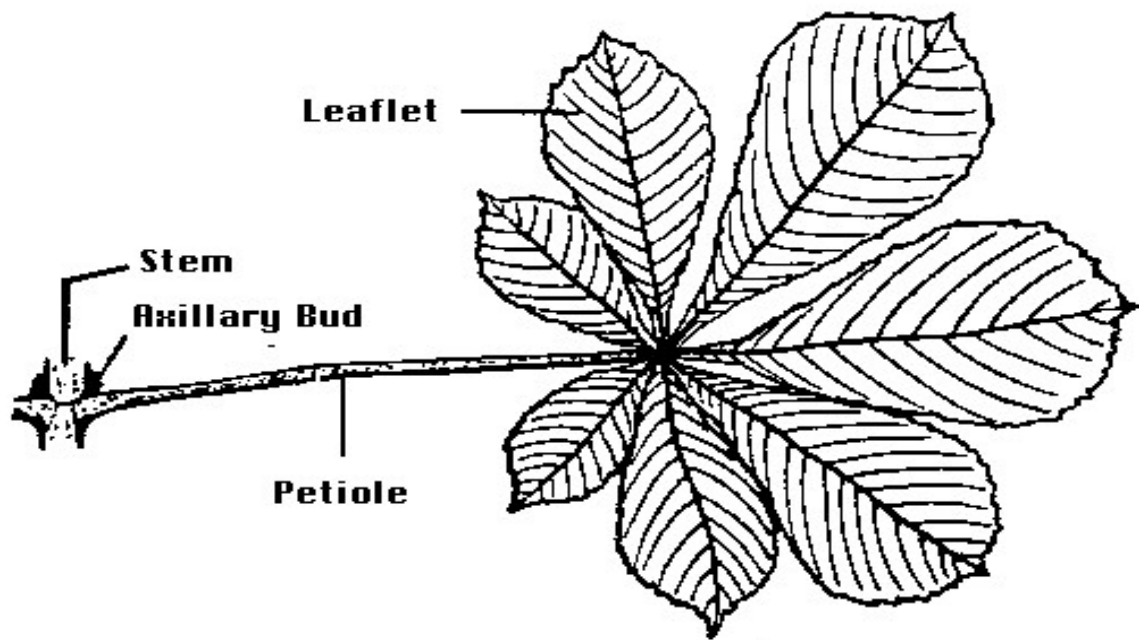
**Trifoliate palmately compound leaves**



**Quadrifoliate palmately compound leaves**



**Multifoliate palmately compound leaves**



**Palmately Compound Leaf (Horsechestnut)**

5 cm