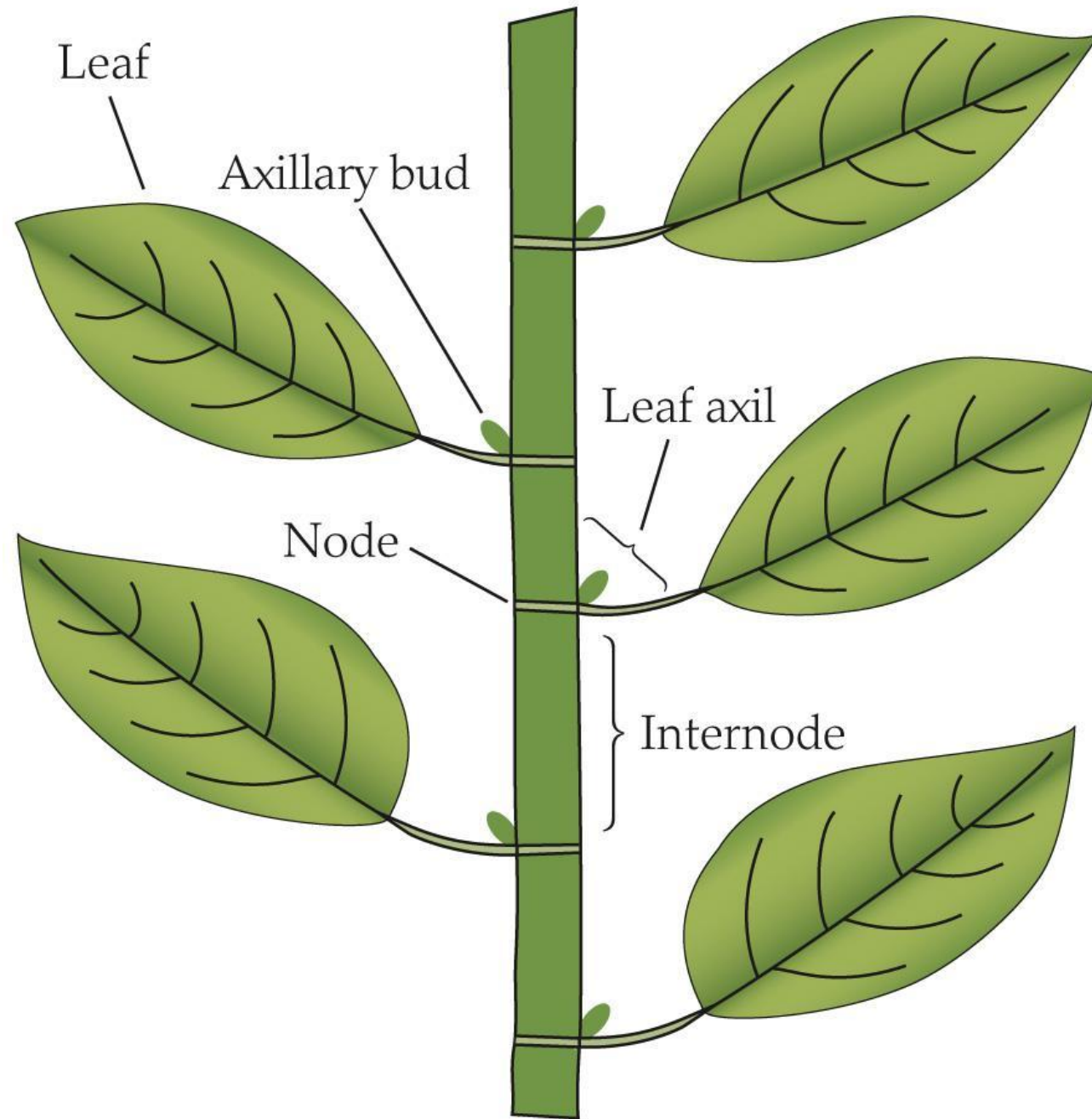
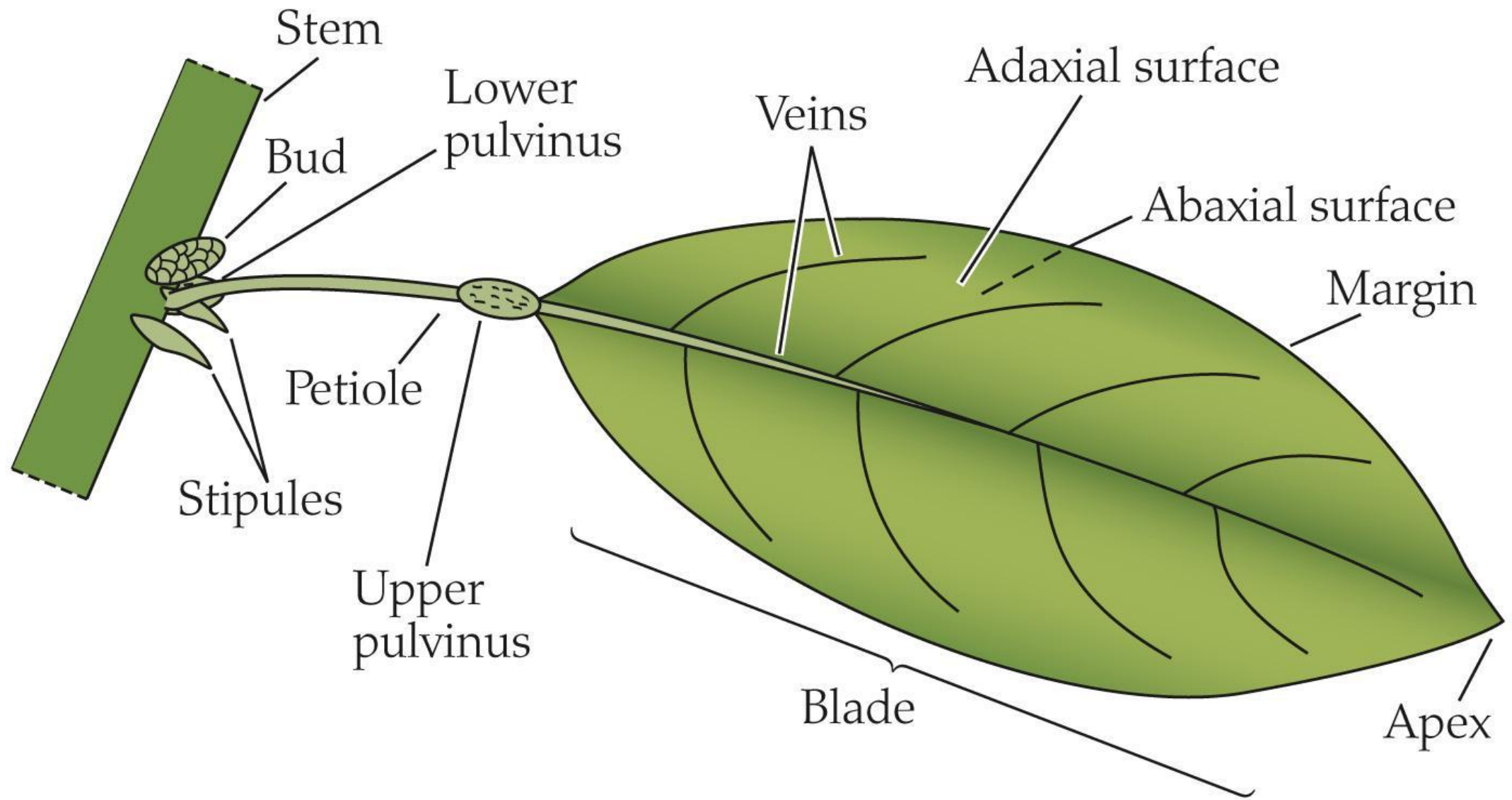


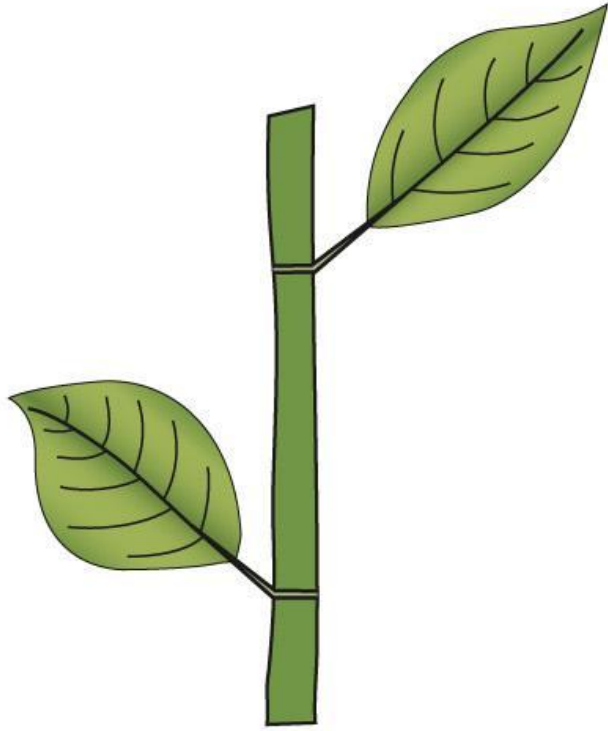
Plant Morphology

Plant characteristics essential to know for plant identification.

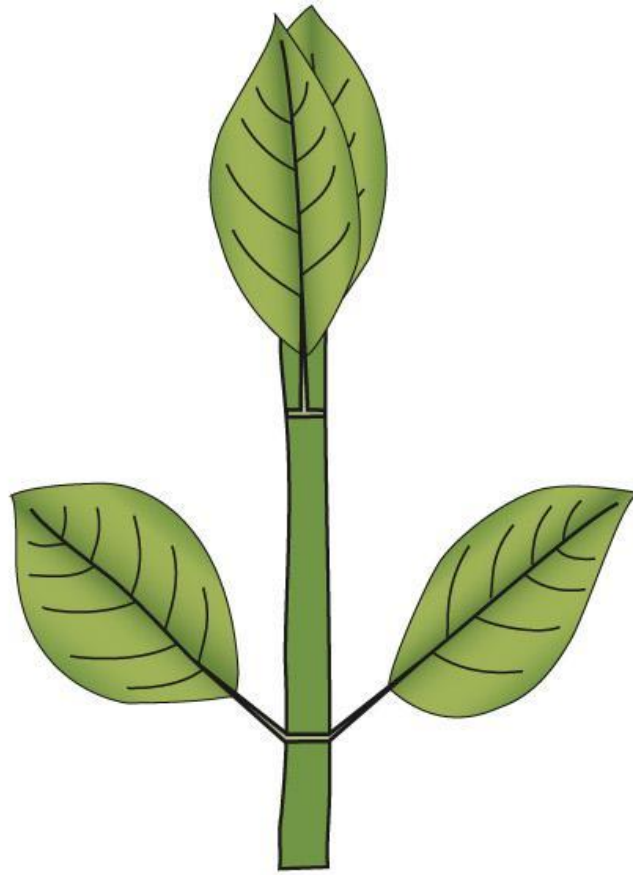




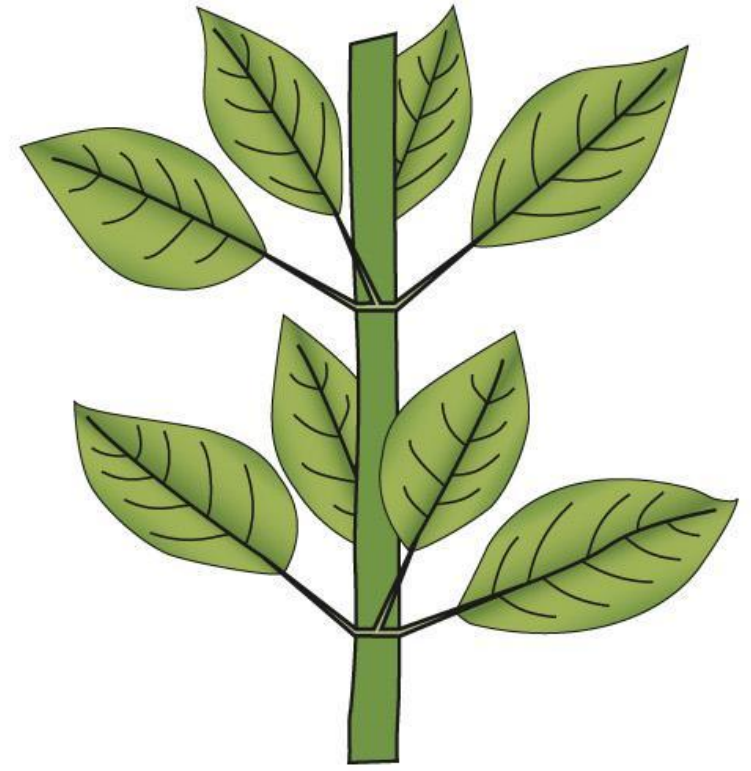
Simple Leaf Arrangement



Alternate
(1 leaf/node)

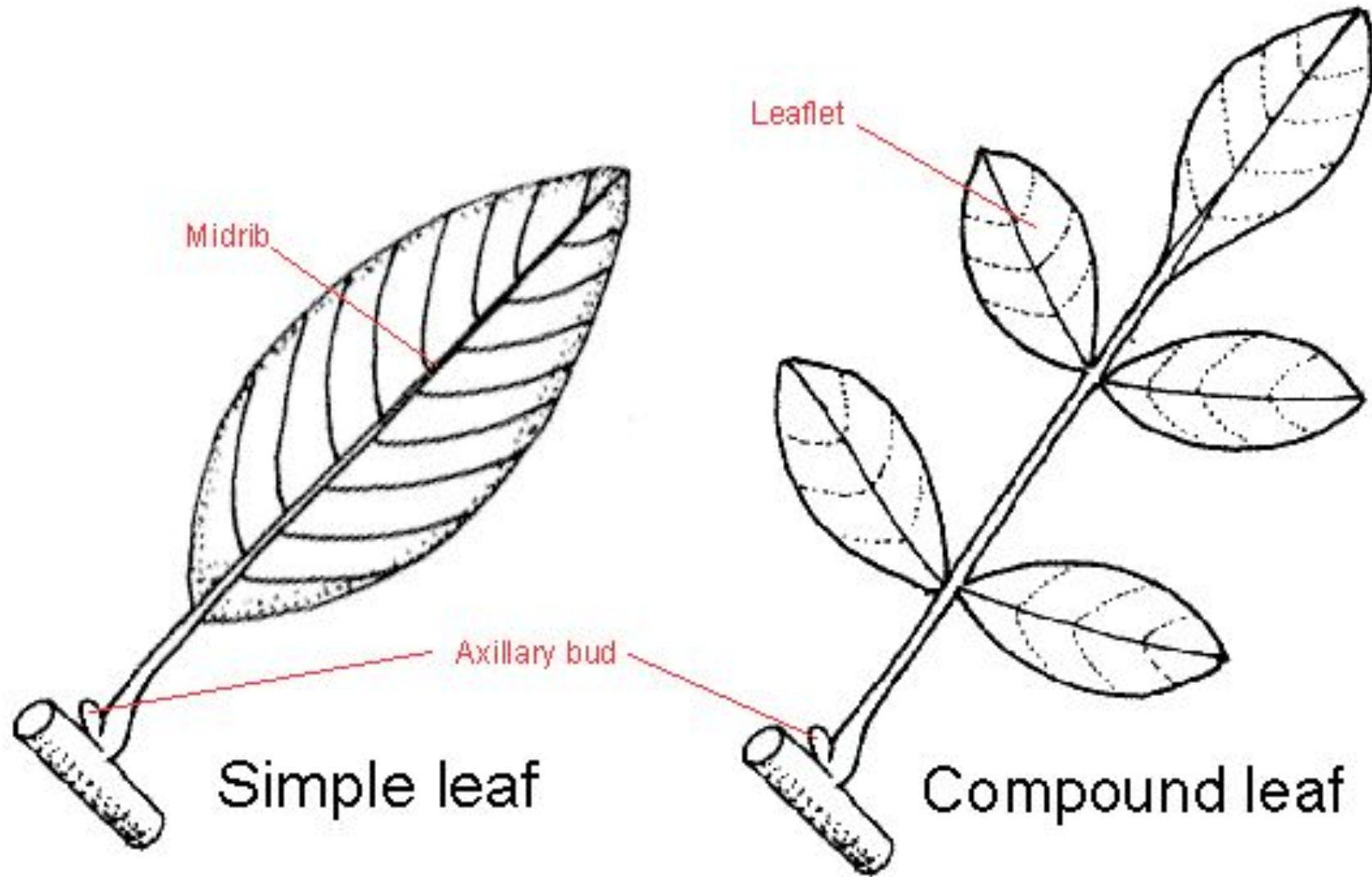


Opposite
(2 leaves/node,
placed on opposite
sides of the stem)

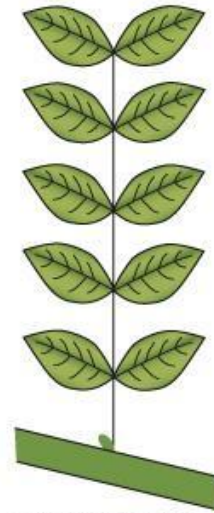


Whorled
(3 or more
leaves/node)

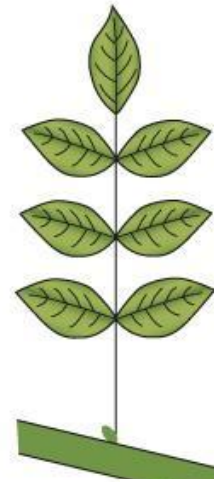
Simple vs Compound



Compound Leaf Arrangement



Even-pinnate



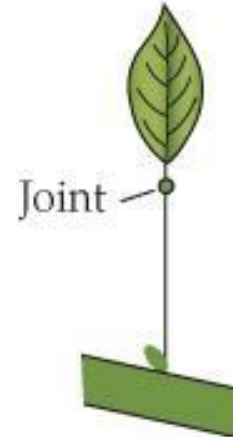
Odd-pi



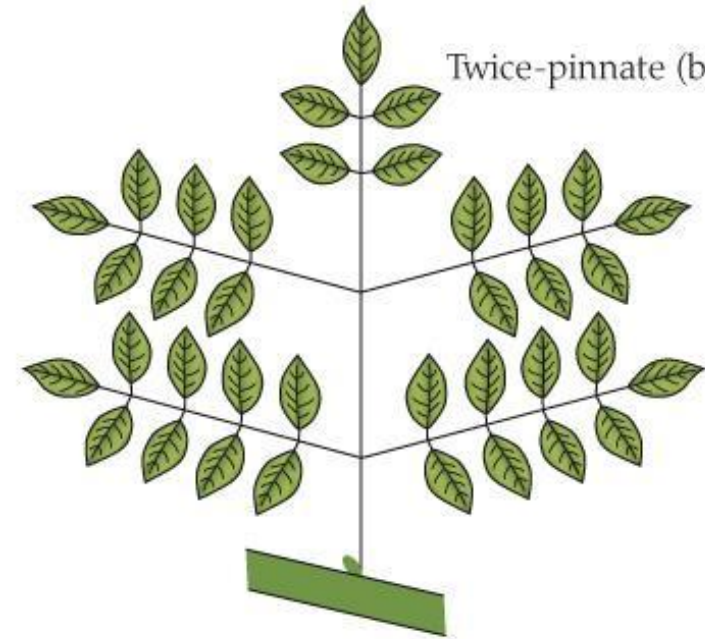
Palmate



Trifoliolate



Unifoliolate



Twice-pinnate (bipinnate)

Leaf Shapes



linear



lanceolate



oblong



elliptical

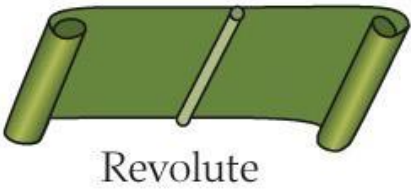
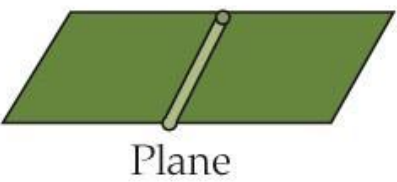
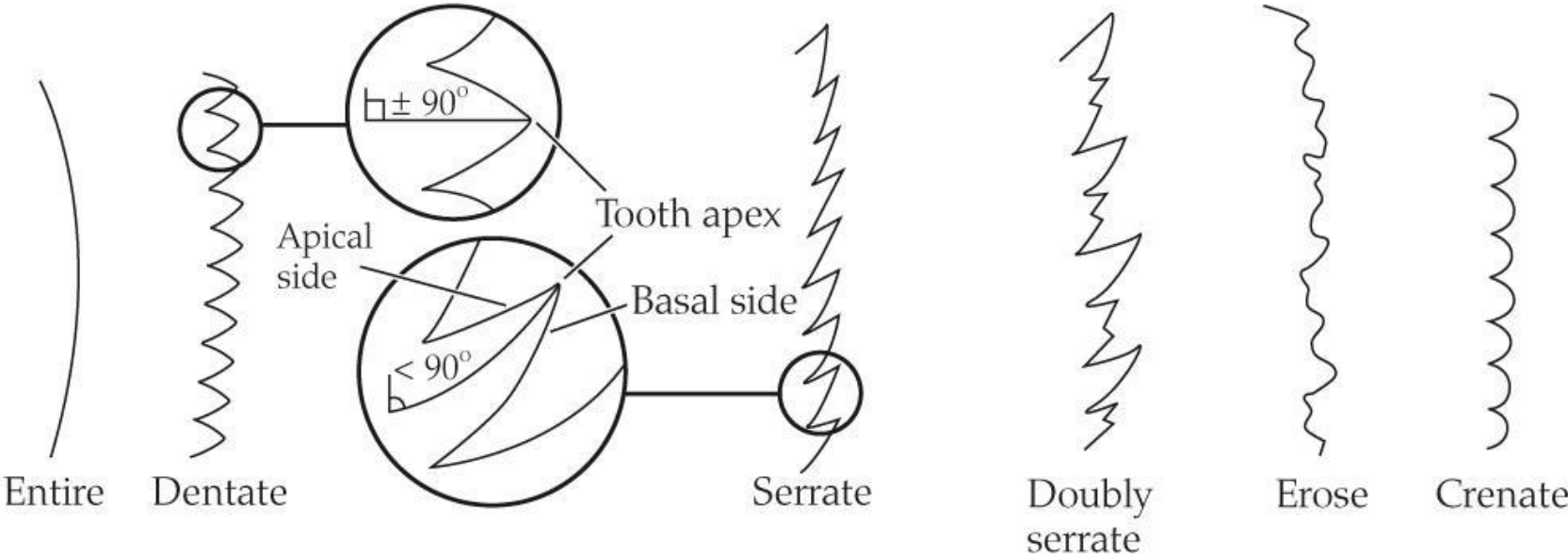
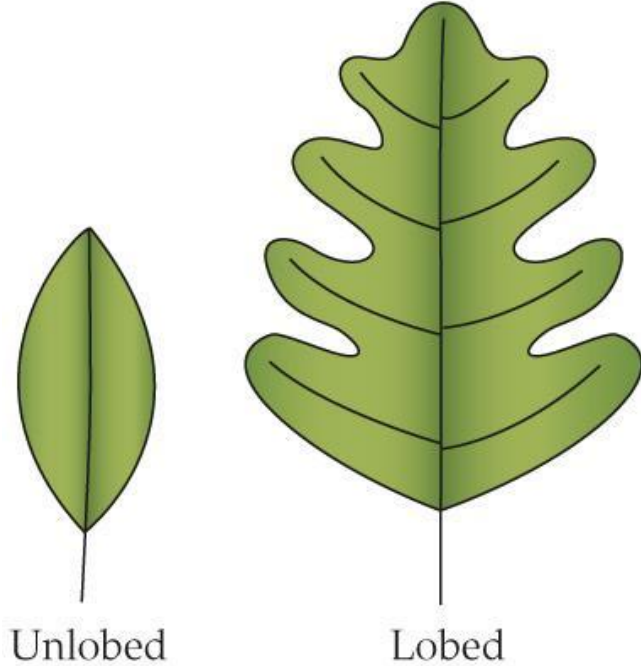


ovate



cordate

Leaf Margins

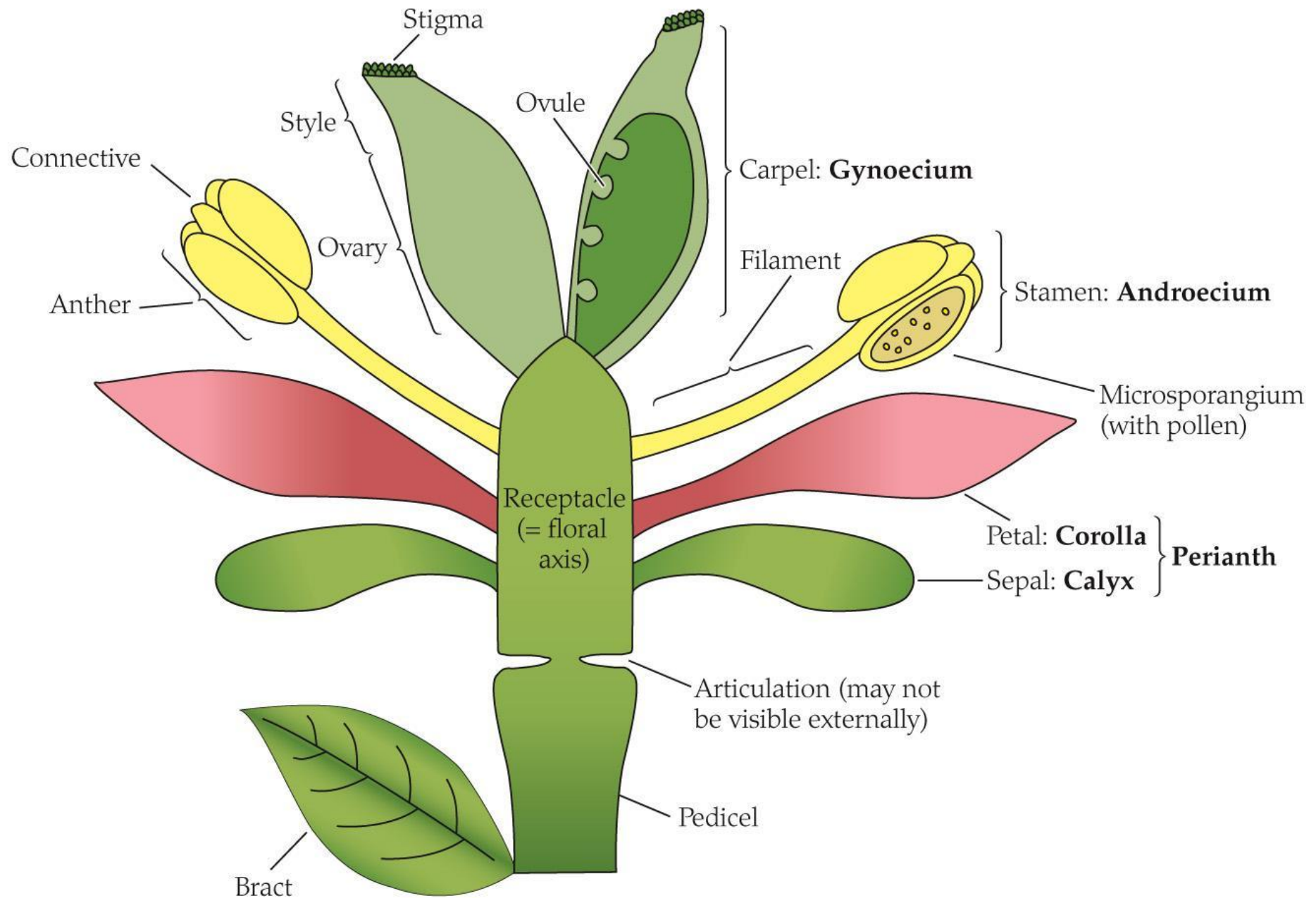


PLANT SYSTEMATICS 4e, Figure 4.12
 © 2016 Sinauer Associates, Inc.

TEXTURE -- TRICHOMES



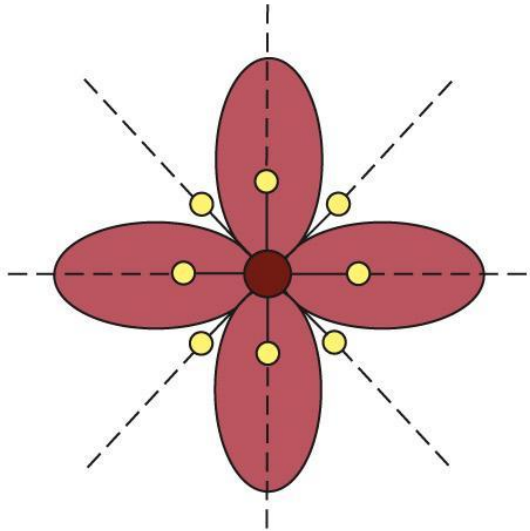
- Glabrous – Lacking hairs
- Pubescent – With hairs
- Glaucous – Waxy Covering



PLANT SYSTEMATICS 4e, Figure 4.16
© 2016 Sinauer Associates, Inc.

FLORAL SYMMETRY

(A) Radial



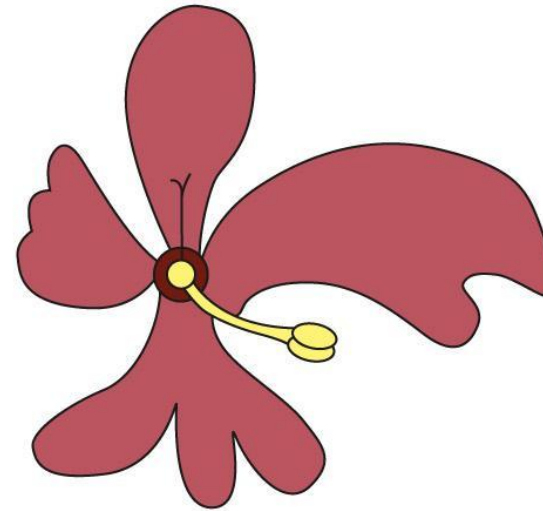
2 or more planes
of symmetry

(B) Bilateral



1 plane of
symmetry

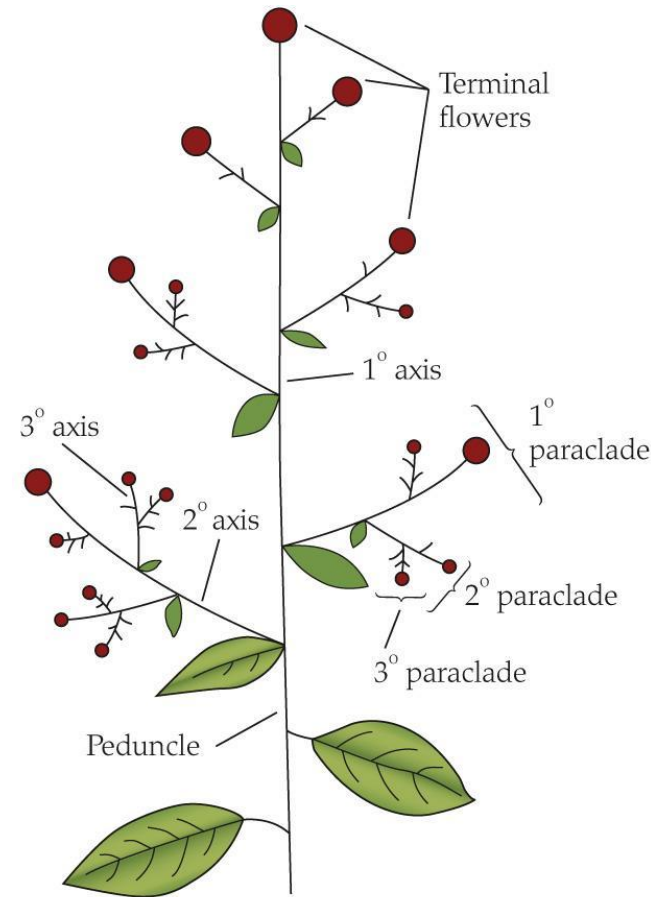
(C) Asymmetrical



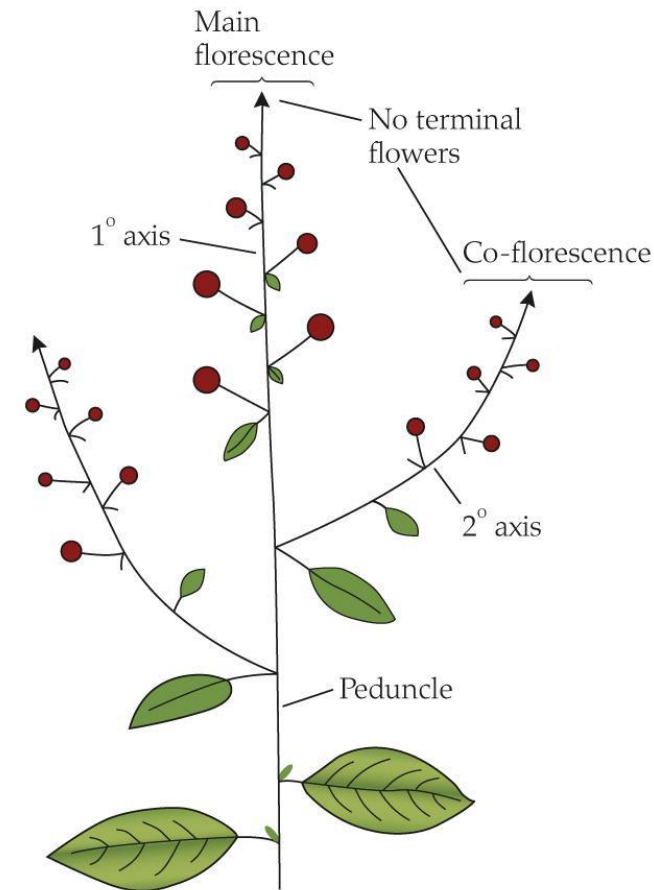
No plane of
symmetry

INFLORESCENCES

- The shoot system that serves for the formation of flowers and which is modified accordingly
- A cluster of flowers
- Determinate – the main axis of the inflorescence ends in a flower
- Indeterminate – the growing point produces only lateral flowers or partial inflorescences

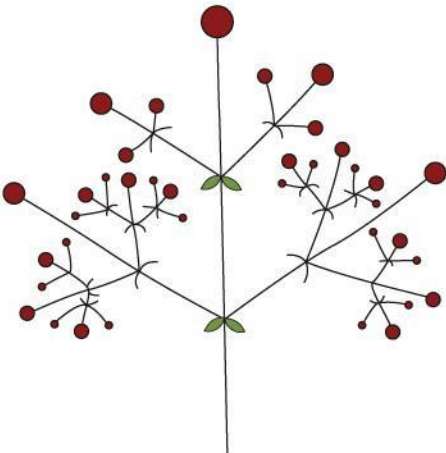


Determinate

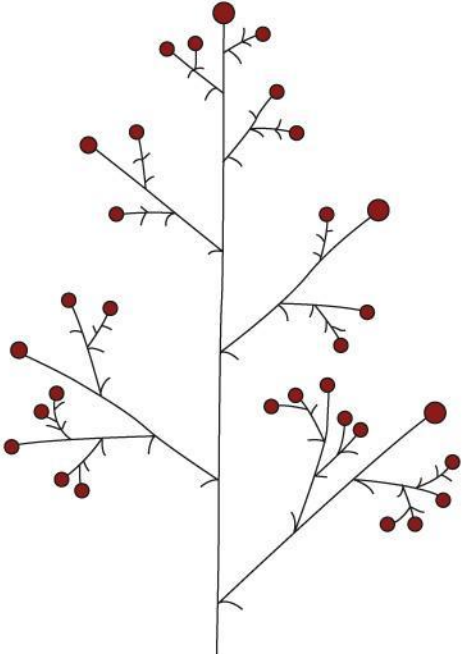


Indeterminate

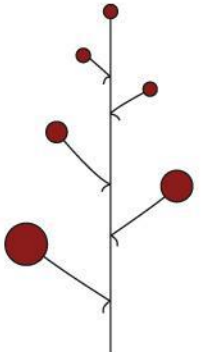
Determinate Inflorescences



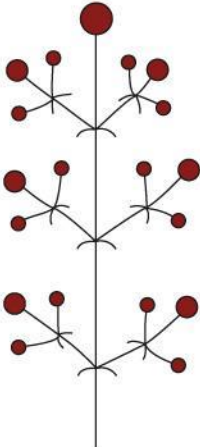
Cyme (= determinate thyrsse)



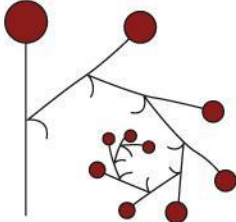
Panicle-like cyme
(= panicle of Weberling)



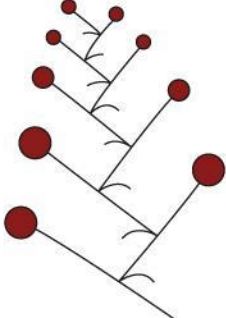
Raceme-like cyme



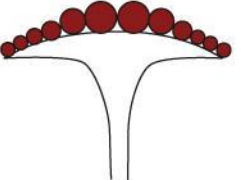
Elongated cyme



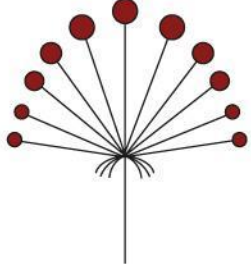
Helicoid cyme



Scorpioid cyme

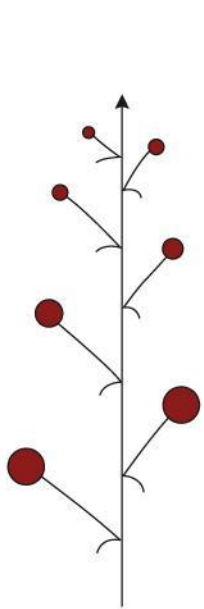


Head (= capitulum)

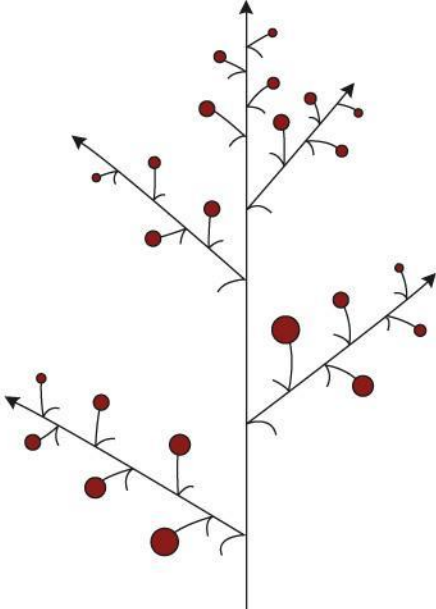


Umbel

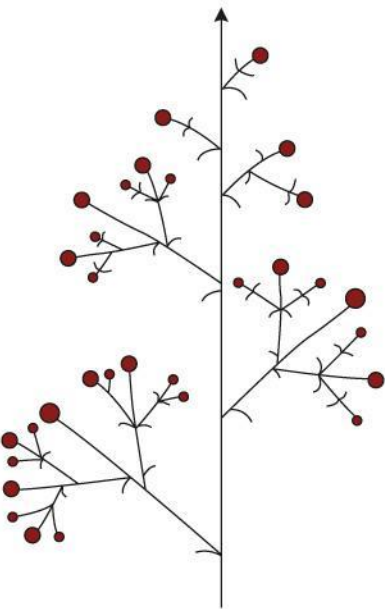
Indeterminate Inflorescences



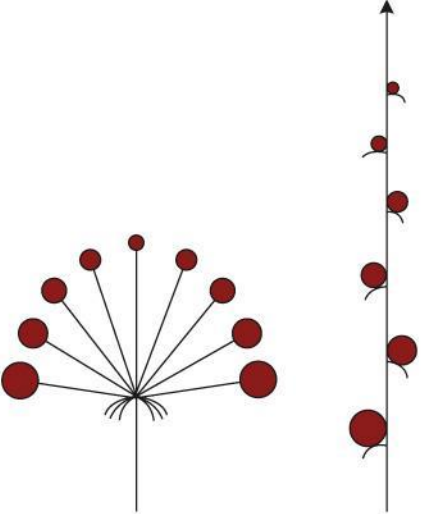
Raceme



Panicle (= double raceme)



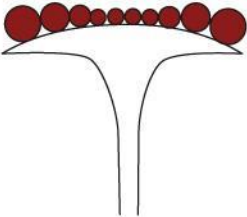
Indeterminate thyrse
(mixed inflorescence)



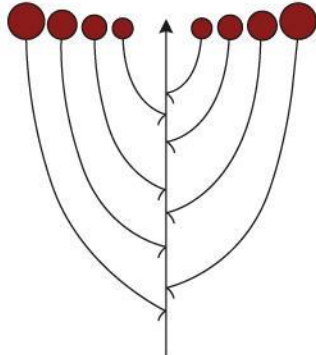
Umbel



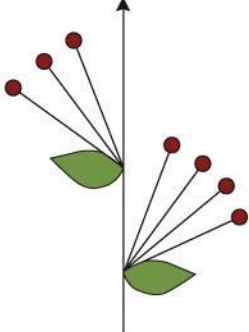
Spike



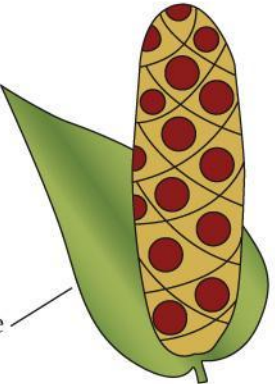
Head (= capitulum)



Corymb



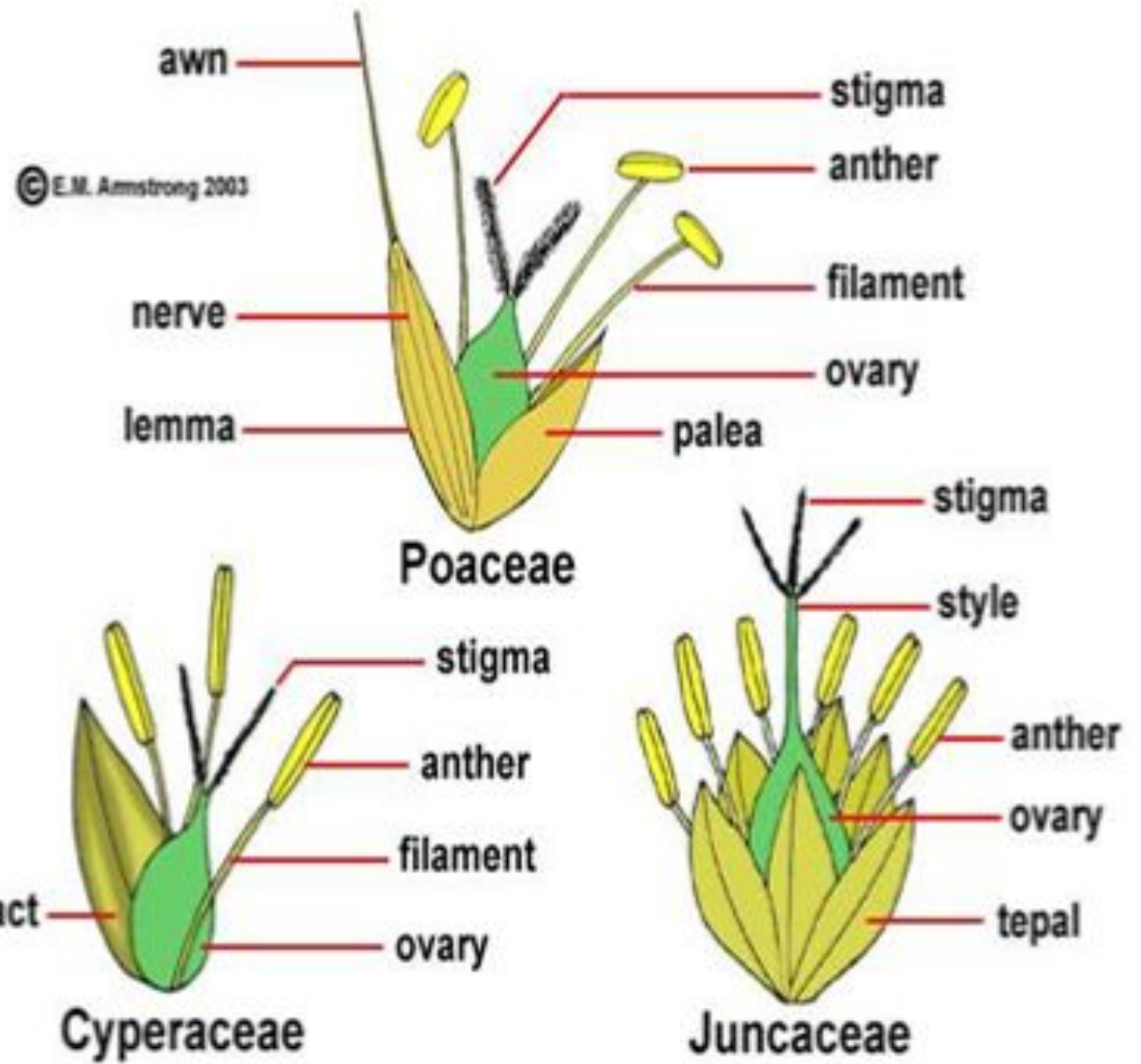
Fascicle



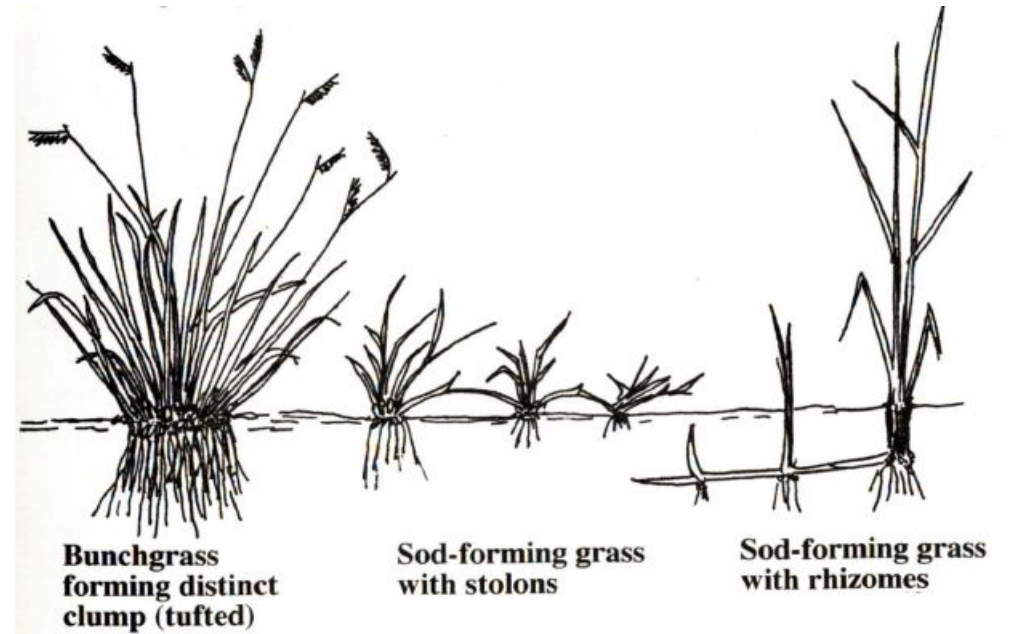
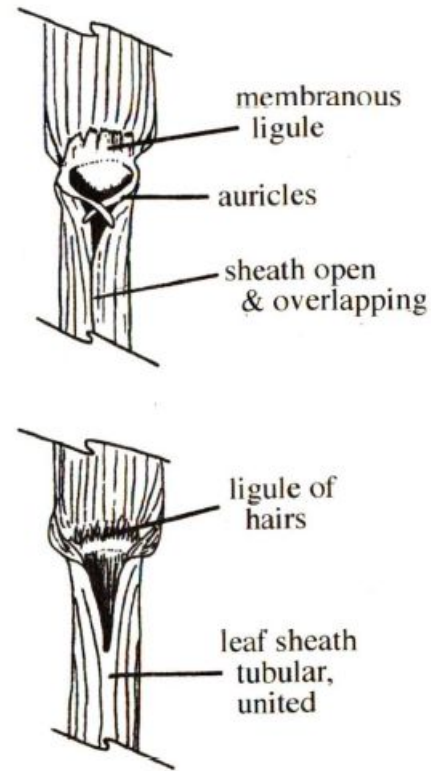
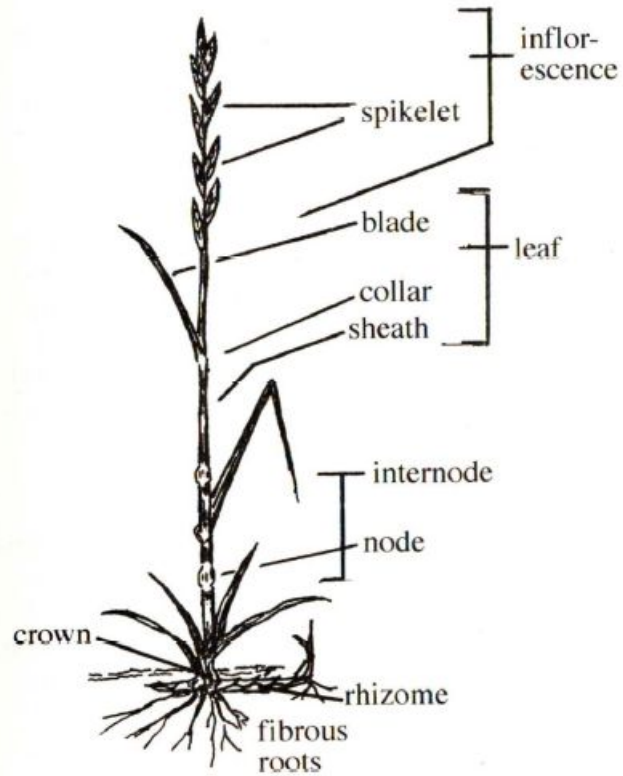
Spathe

Spadix

- Poaceae = Grasses
- Cyperaceae = Sedges
- Juncaceae = Rushes

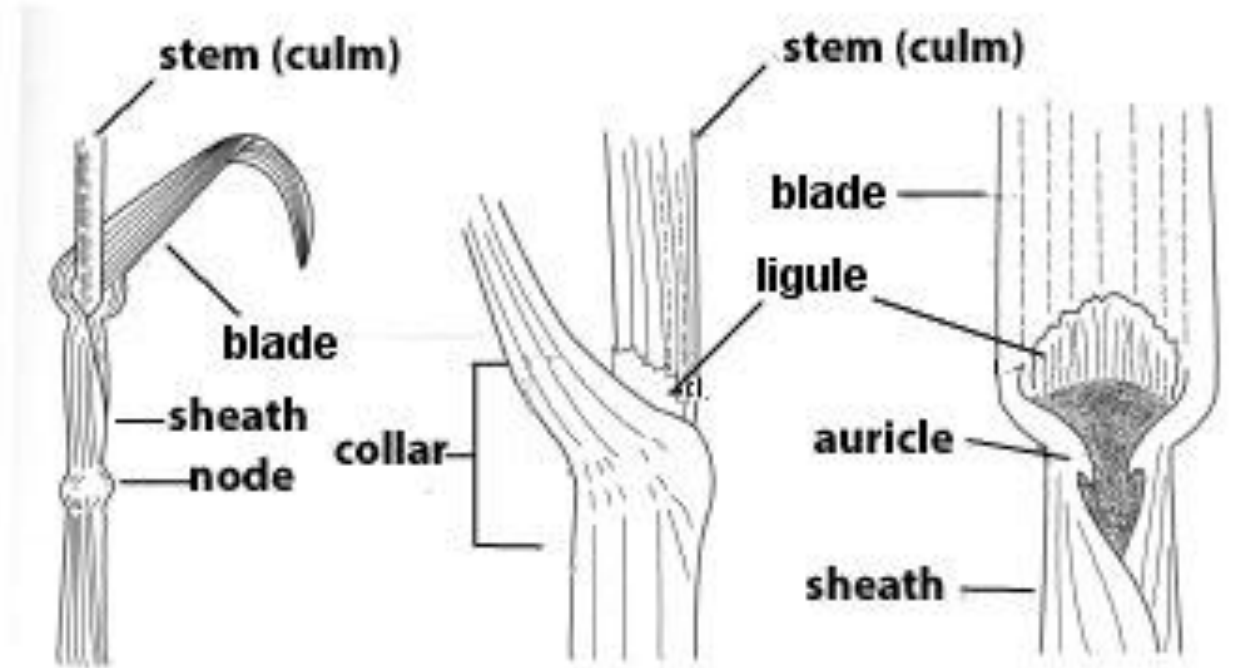


GRASS MORPHOLOGY



GRASS MORPHOLOGY

- **Ligule** = A membranous scale on the inner side of the leaf sheath at its junction with the blade
- **Auricle** = A small ear-like projection from the base of a leaf or petal
- **Node** = Swollen point on stem where a leaf is borne



GRASS FLORAL MORPHOLOGY



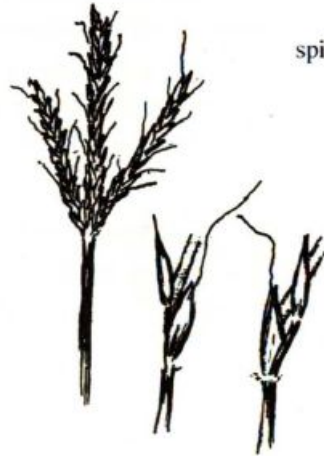
Panicle



Wheatgrass spike

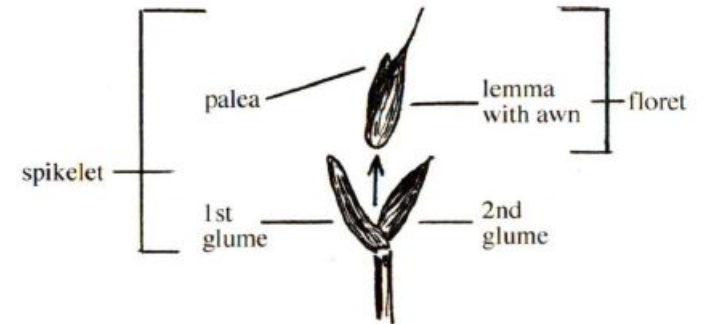


One-sided spikes of blue grama (6 cm long)



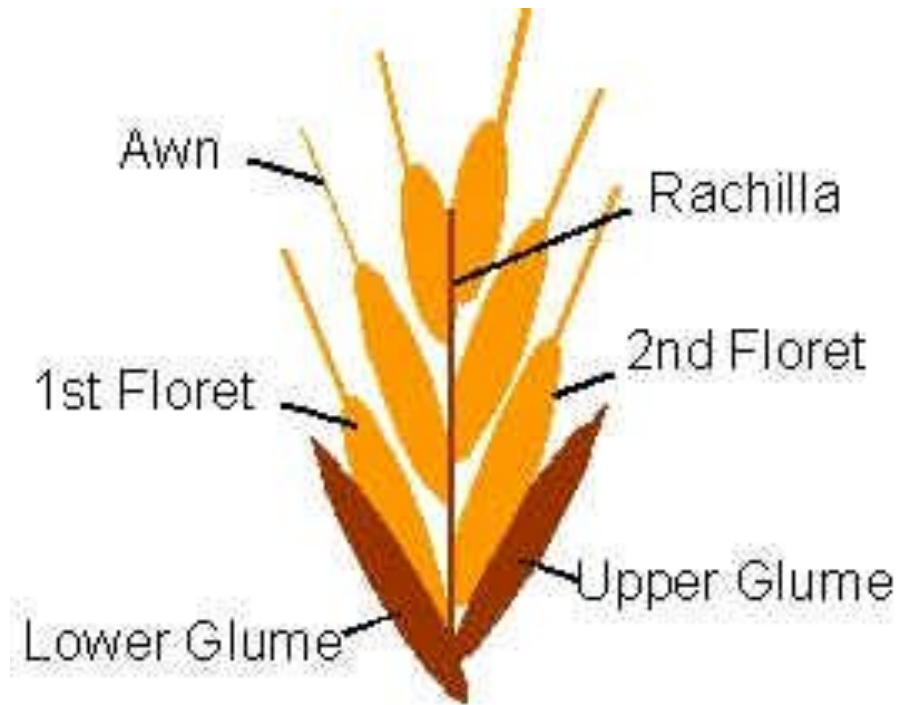
spike

Inflorescence of big bluestem, spicate raceme (10 cm long), plus closeups of paired spikelets; 1 sessile, 1 stalked (20 mm long)

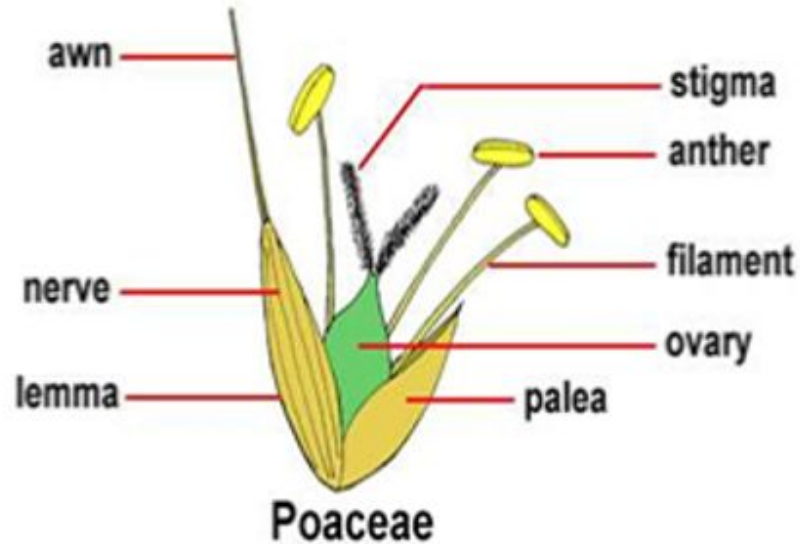


Grass spikelet detail

SPIKELET = The basic unit of a grass flower, consisting of two glumes or outer bracts at the base and one or more florets above.



FLORET = The wind-pollinated flower of a grass.



- **Palea** = The upper bract of the floret of a grass.
- **Lemma** = The lower bract of the floret of a grass.

