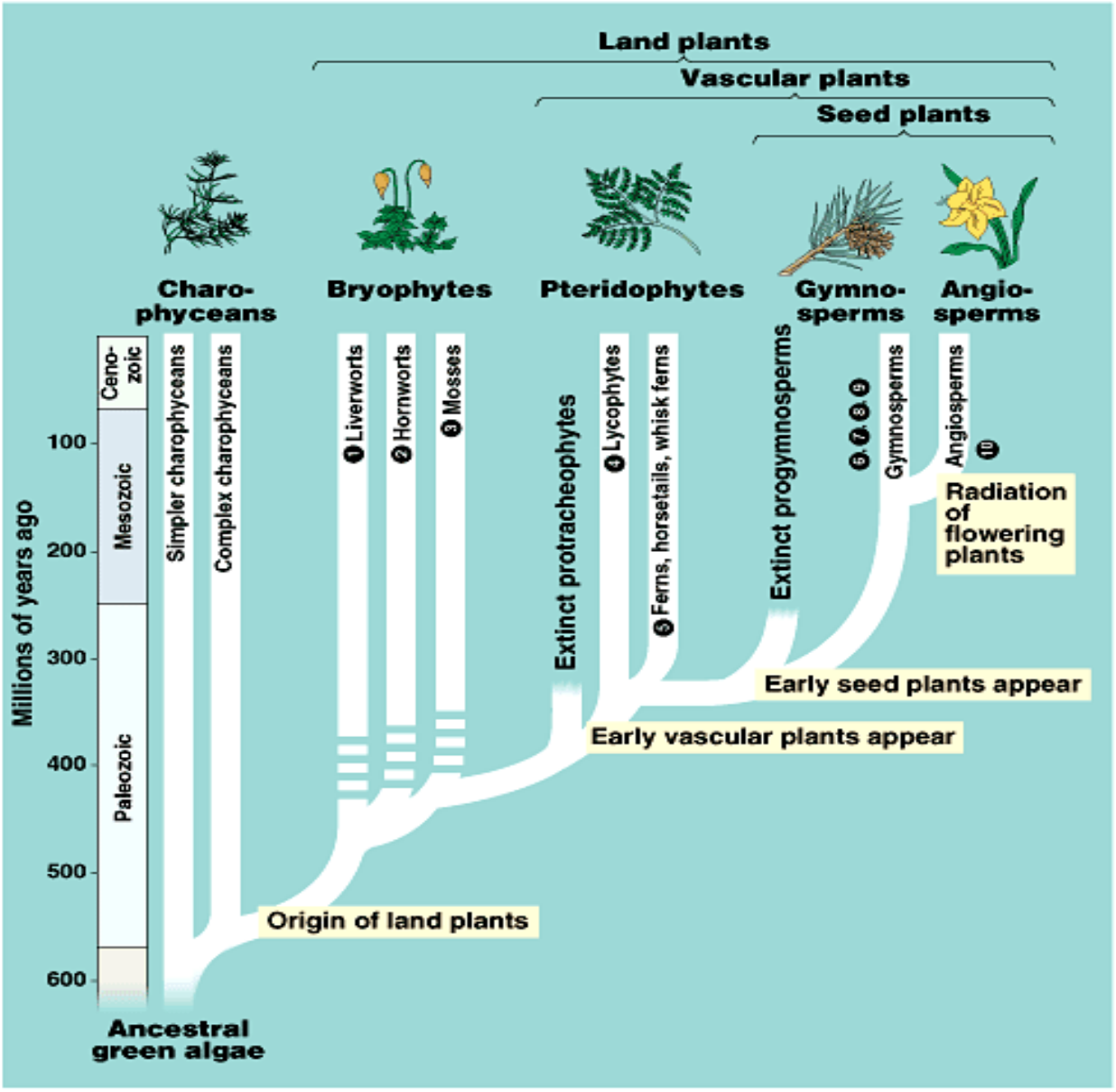


# Pre AP Biology

Plant Kingdom (8.6)

Part 1

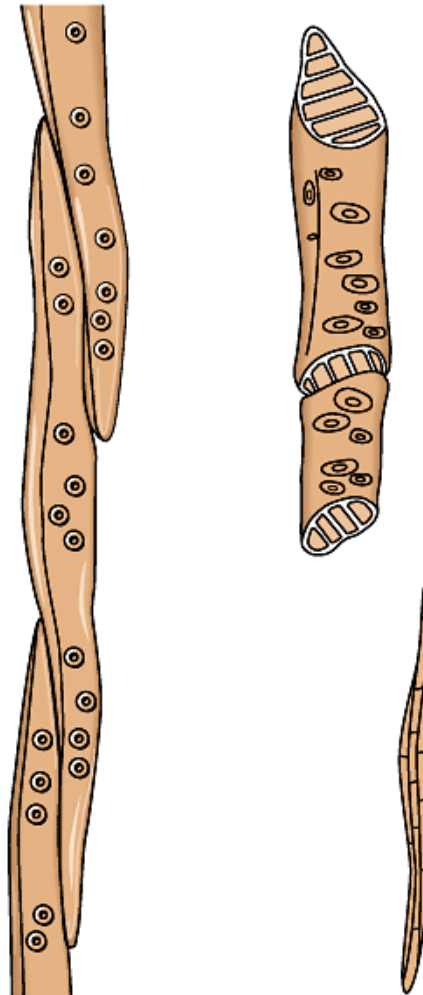
# Plant Evolution



# Waxy Cuticle on the leaves



# Vascular Tissue to transport fluids



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# Seed to survive dry times



# Flowers



# Flowers and animals

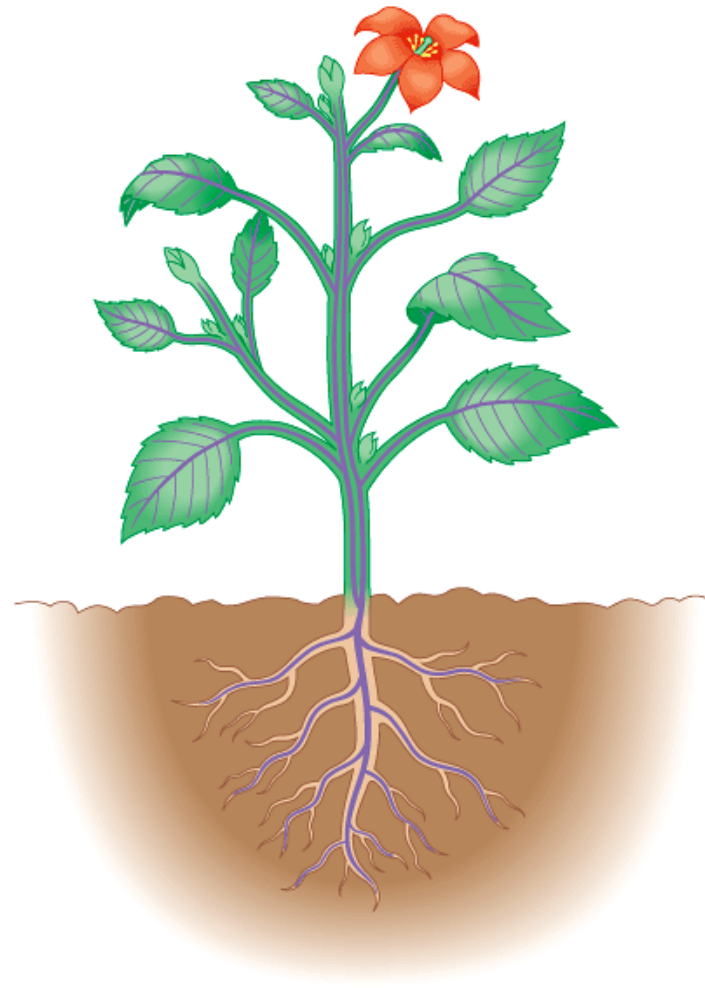


# Fruits

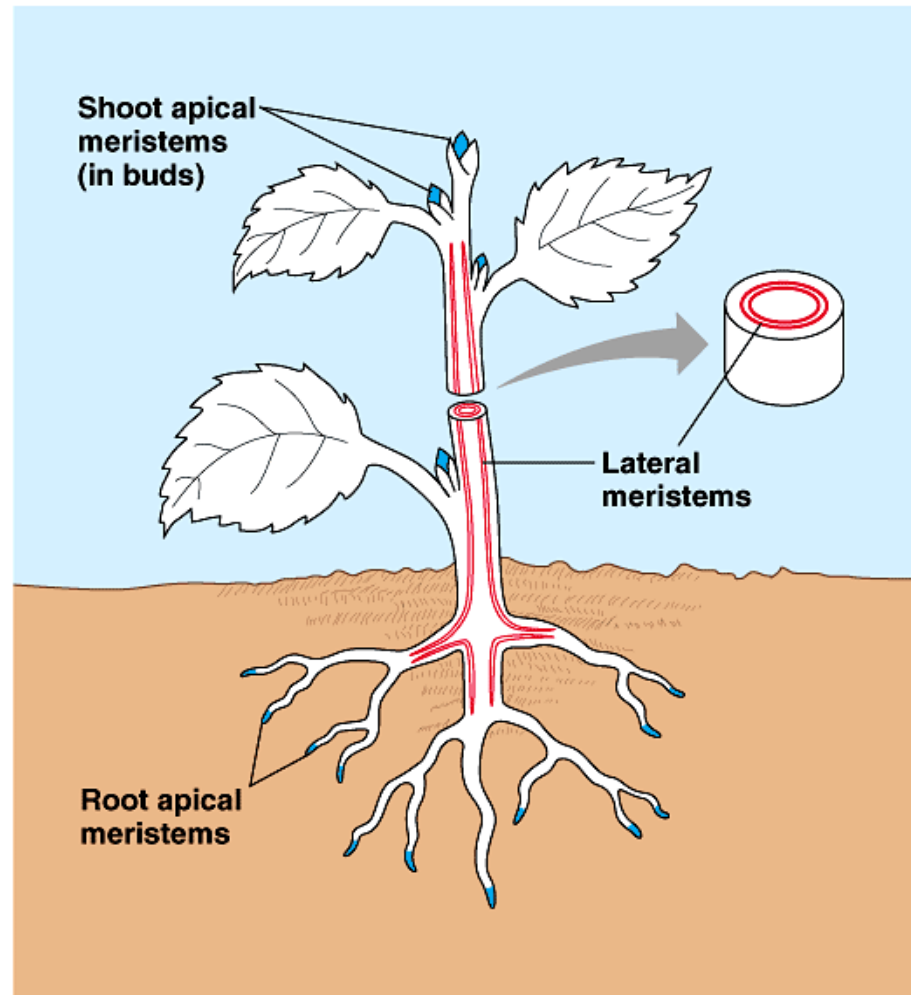




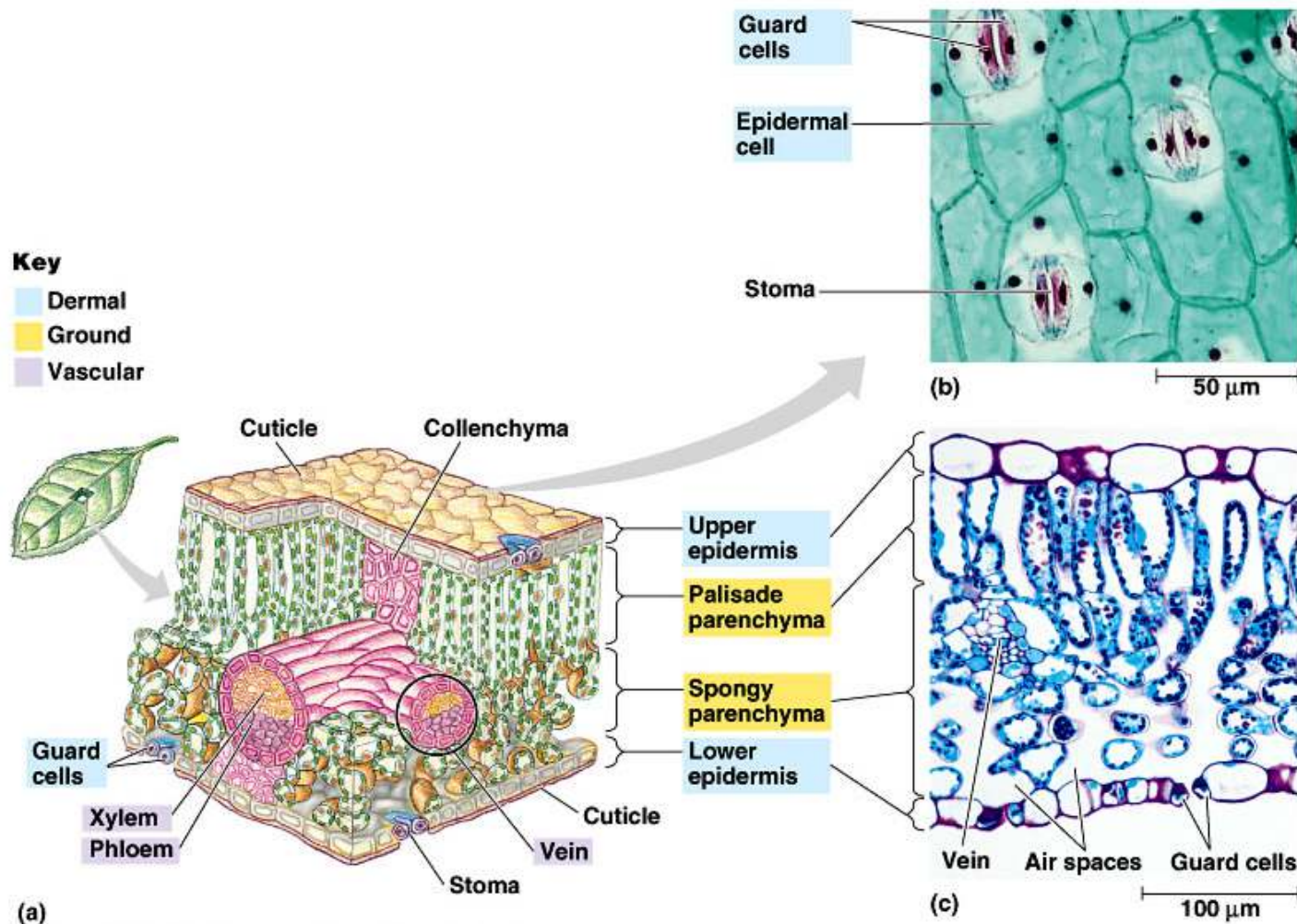
# Plant Basic structure



# Apical Meristems for growth

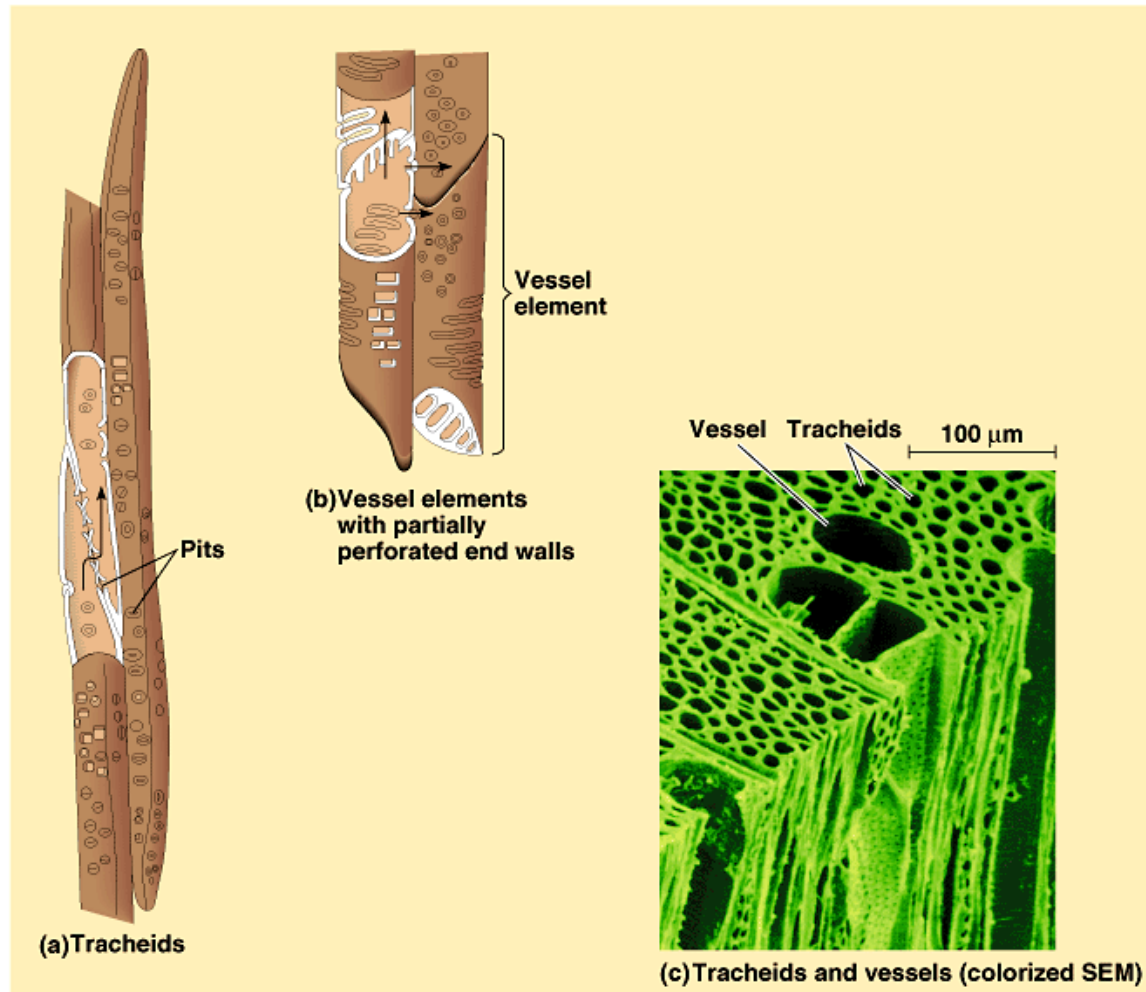


# Stomata of leaves



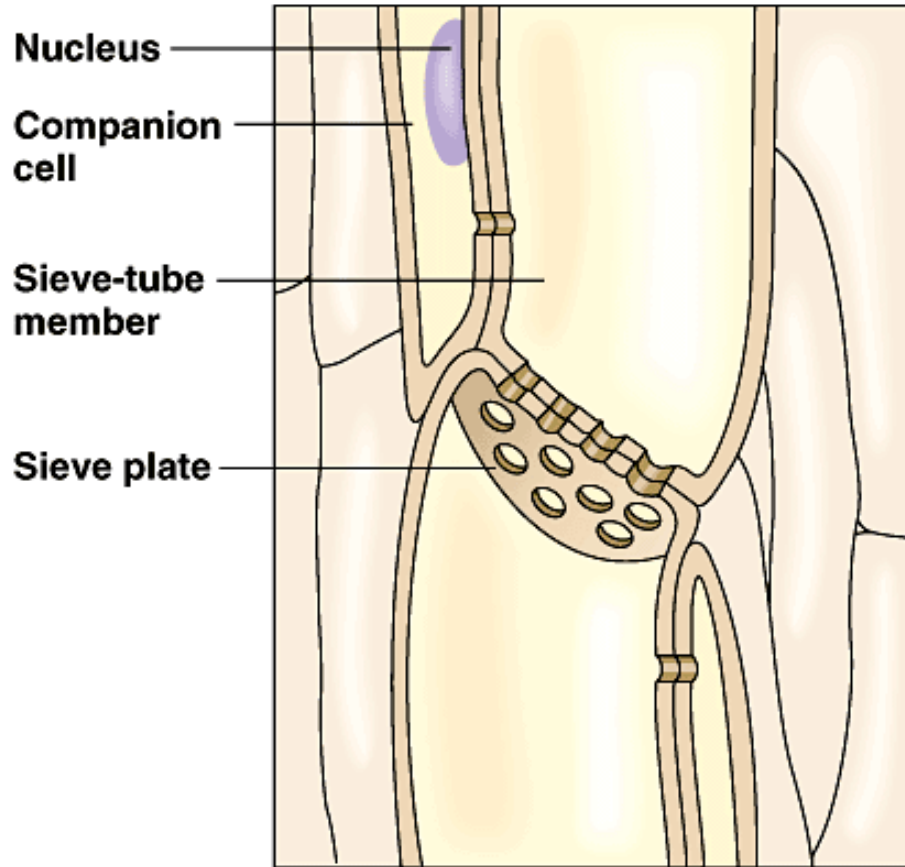
# Xylem

Carries water and nutrients up to the leaves.

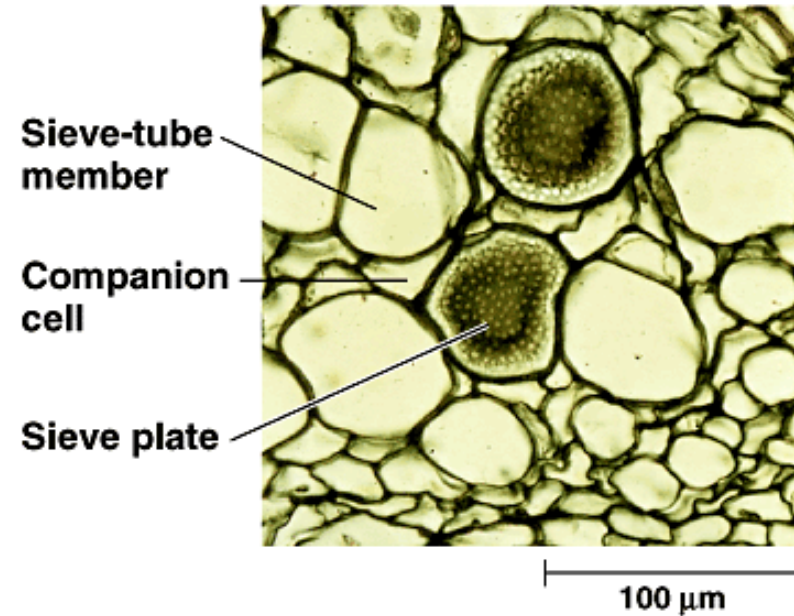


# Phloem

Carries sugar water down the plant from the leaves.



(a) Longitudinal view



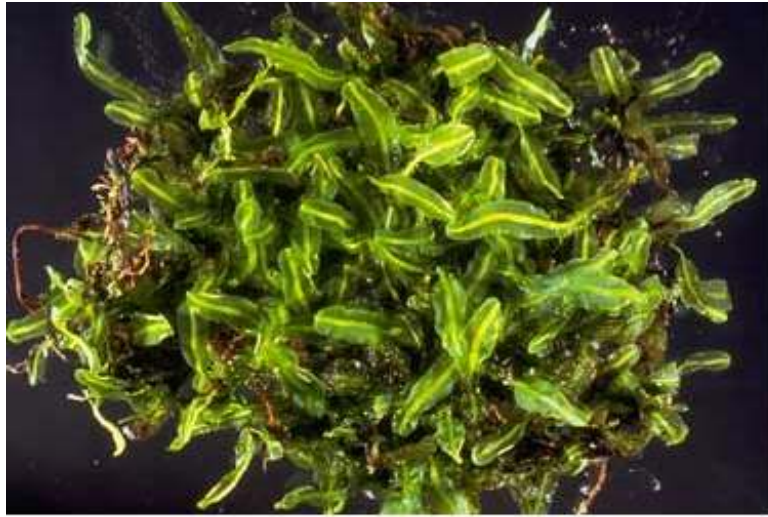
(b) Transverse section (LM)

# Pre AP Biology

Plant Kingdom (8.6)

Part 2

# Bryophytes



# Hepatophyta





# AnthoceroPHYta

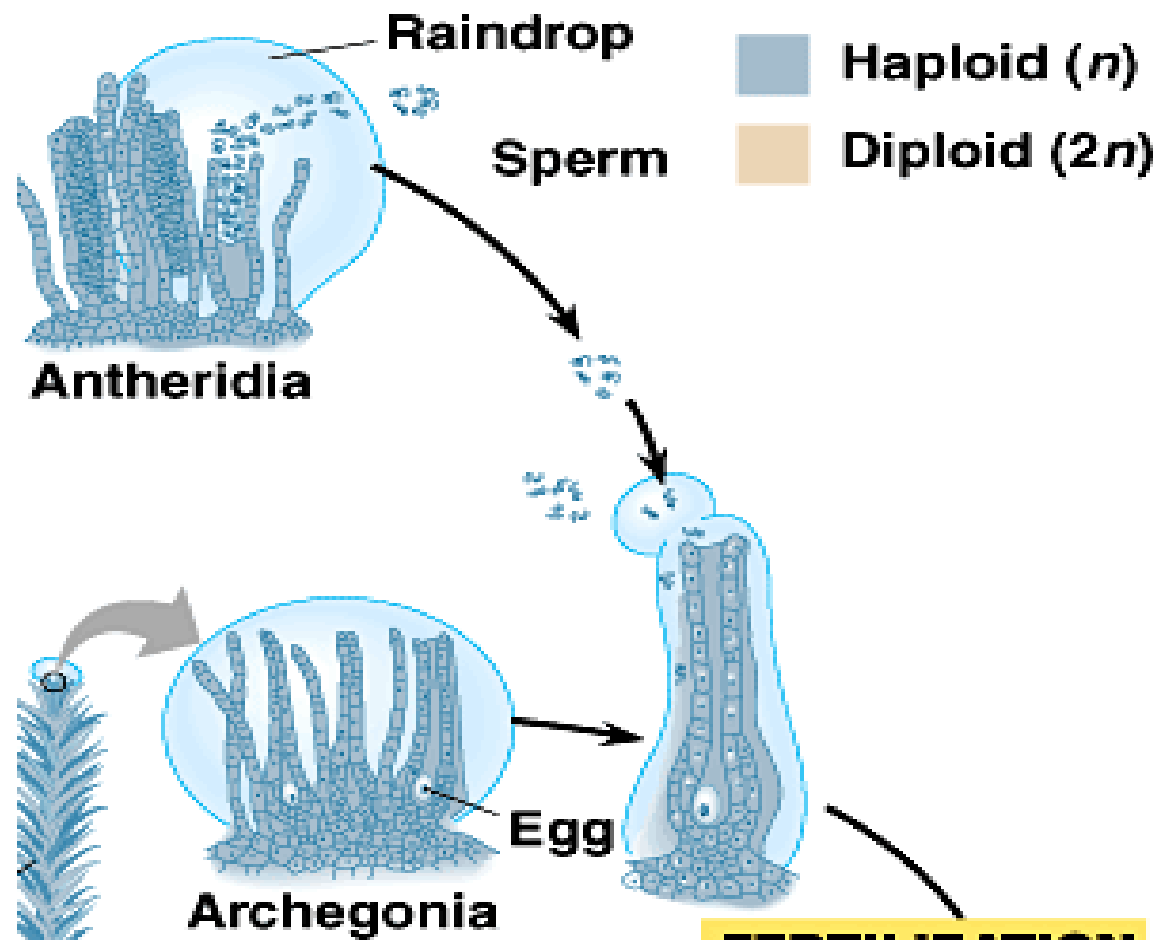


# Bryophyta

(Shows both generations)



# Sperm from the male swimming to the female structure



# Microphyll “leaves”



# Sporophyte of moss



# Peat Moss Bog in upper Canada



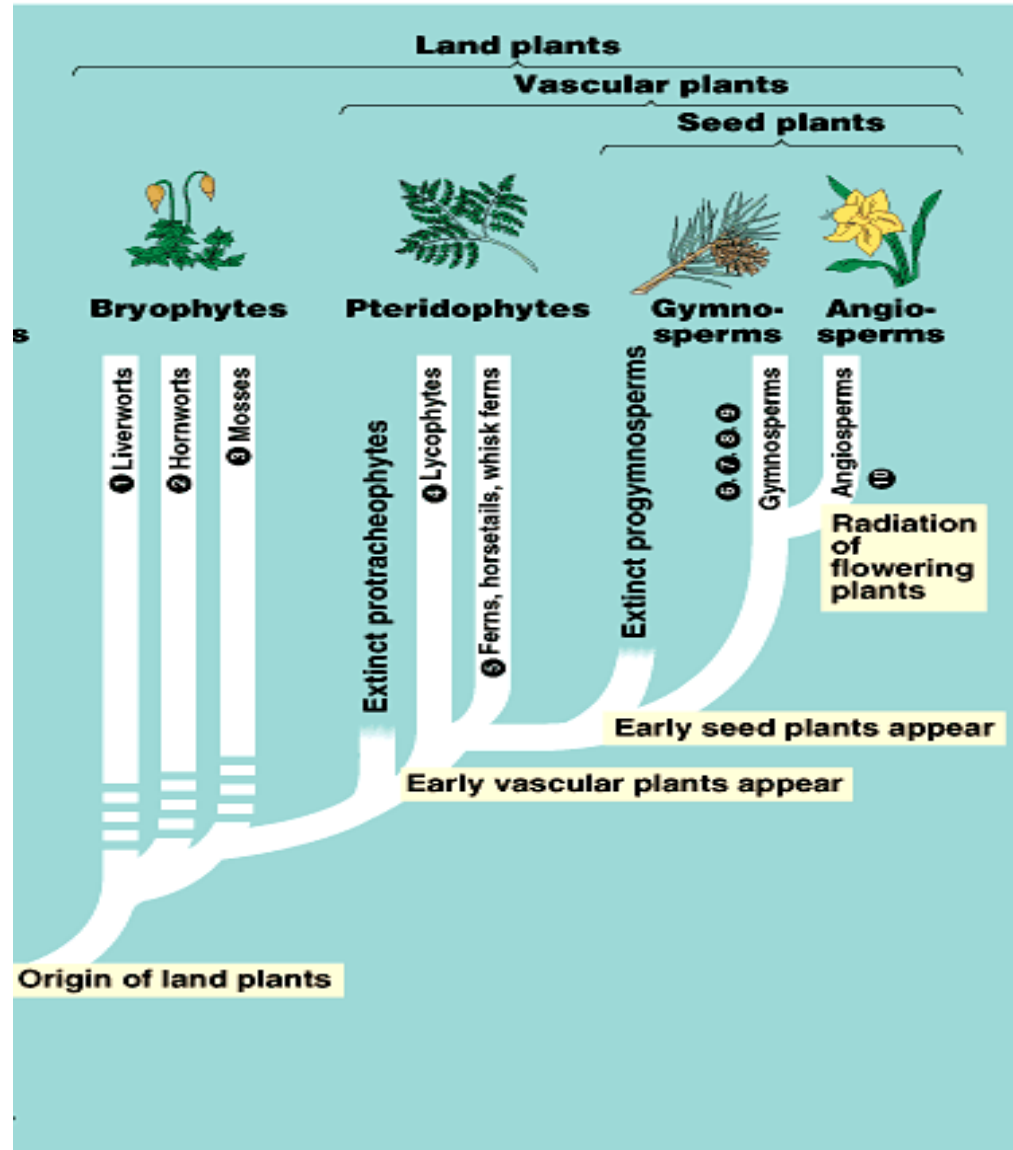
Bertram  
Cummings

# Pre AP Biology

Plant Kingdom (8.6)

Part 3

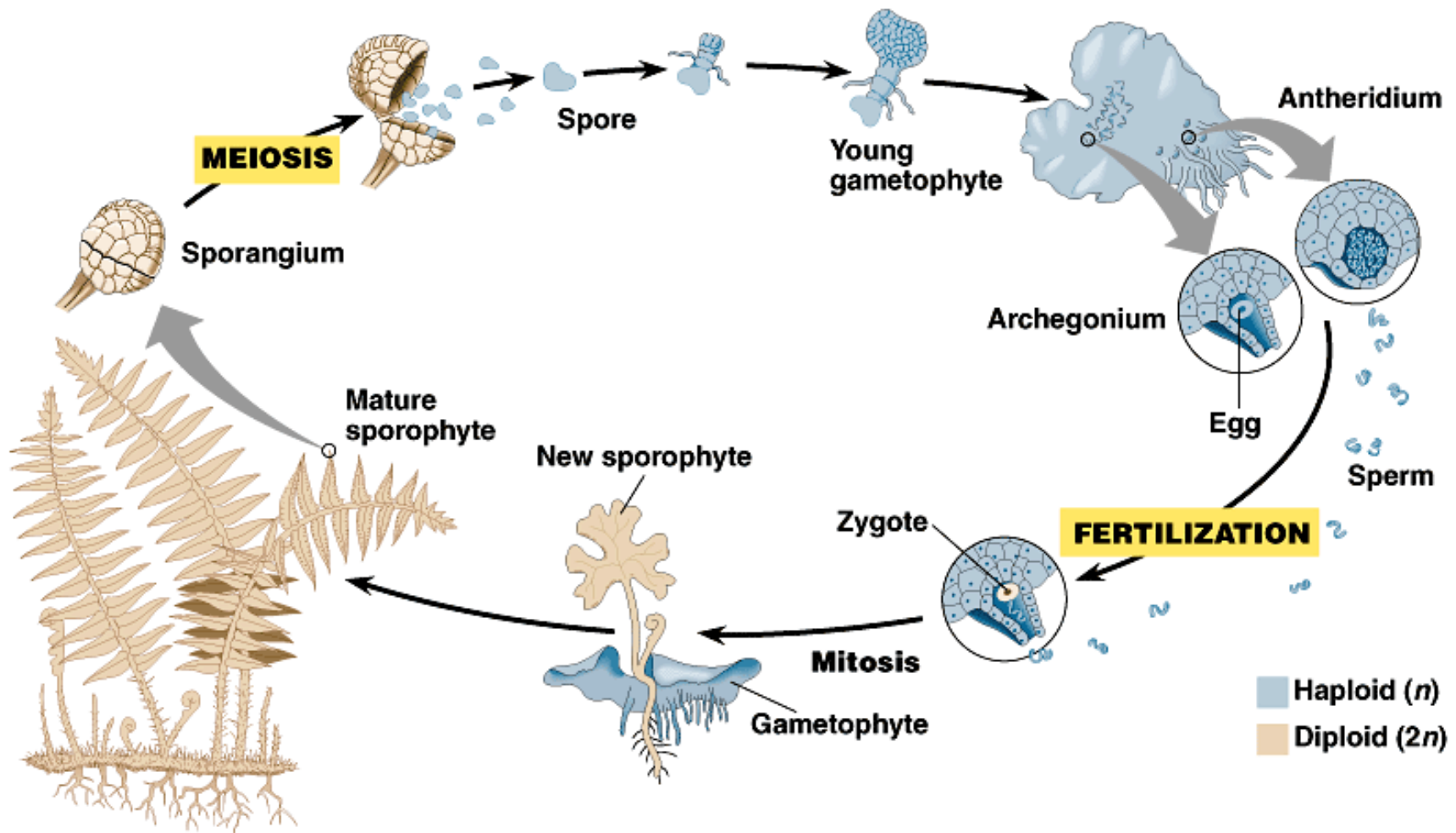
# Vascular plants





# Sporophyte Generation in Brown

## Gametophyte Generation in grey



# New type of cell wall with Lignin and pectin re-enforcements

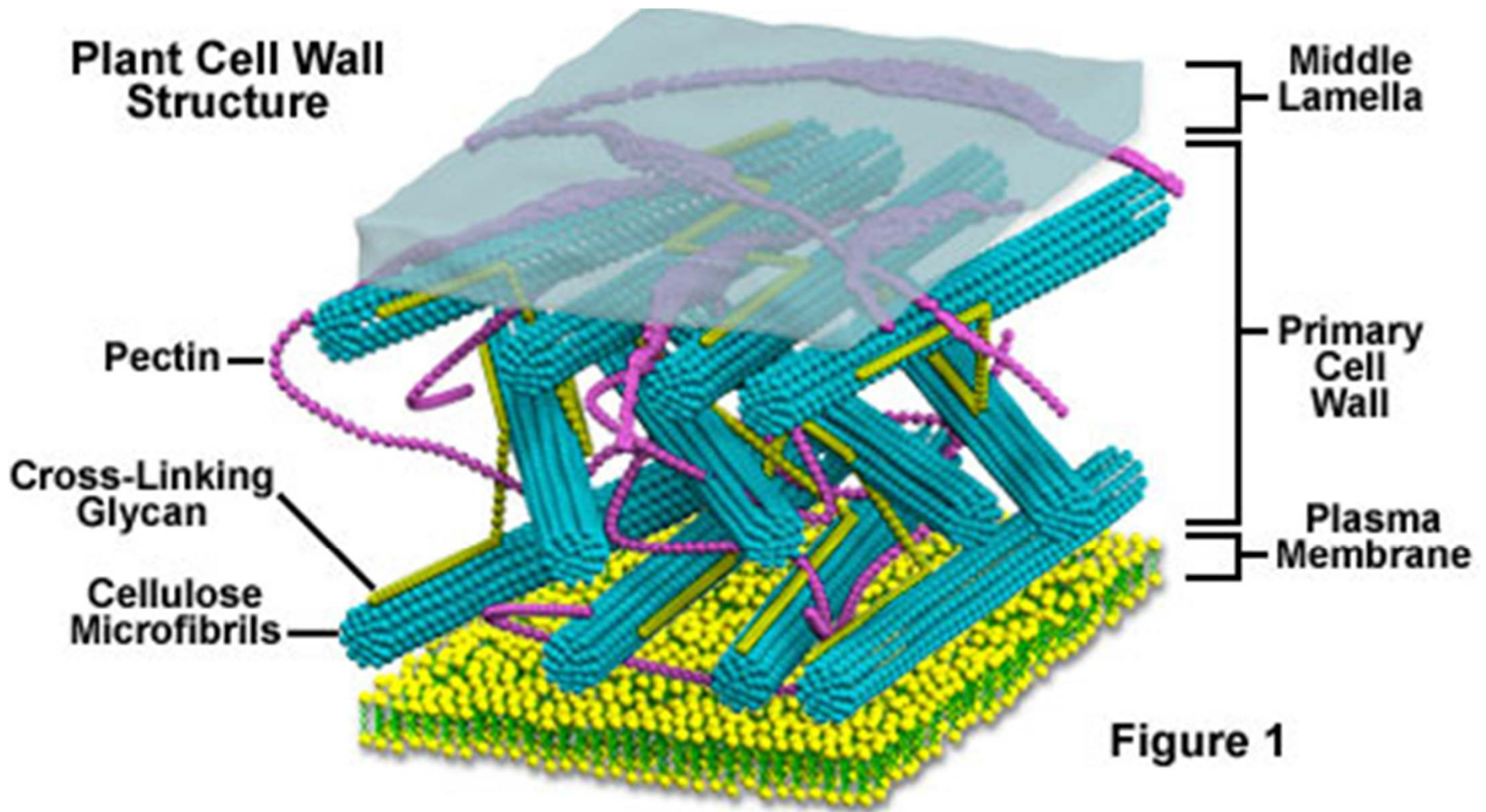


Figure 1

# Real Roots



# Real Leaves with Vascular Tissue



# Pteridophytes



# Lycophytes



# Lycophyte Forests



# Epiphyte growing on a tree limb





# Pterophyta - Psilophyteas



# Pterophyta - Sphenophytes



# Pterophyta - Ferns



# Fronds



# Fiddlehead (Developing Frond)



# Frond with Sori



# Pre AP Biology

Plant Kingdom (8.6)

Part 4

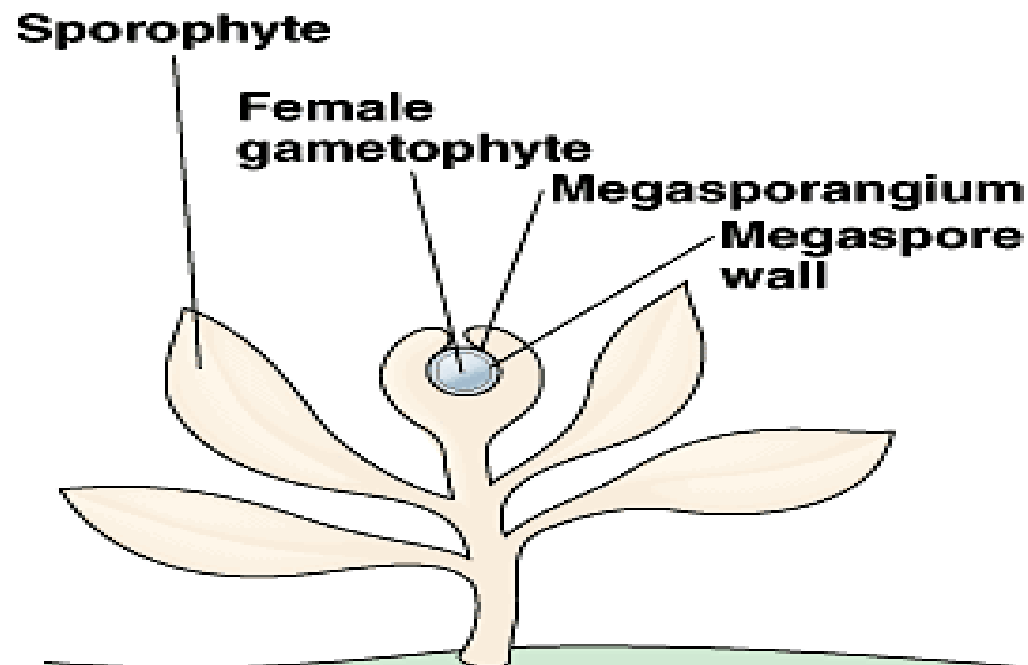
Pangaea about 250 million years ago – very dry time on land





# Greatly reduced gametophyte generation

-  Gametophyte ( $n$ )
-  Sporophyte ( $2n$ )



**(c) Reduced gametophyte dependent on sporophyte (seed plants)**

# Gymnosperm leaves (“needles”)



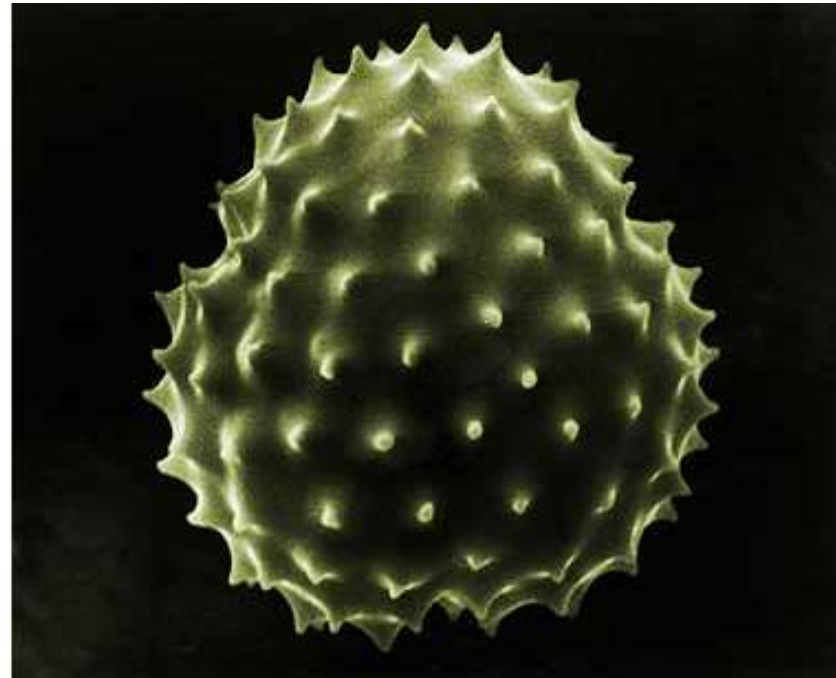
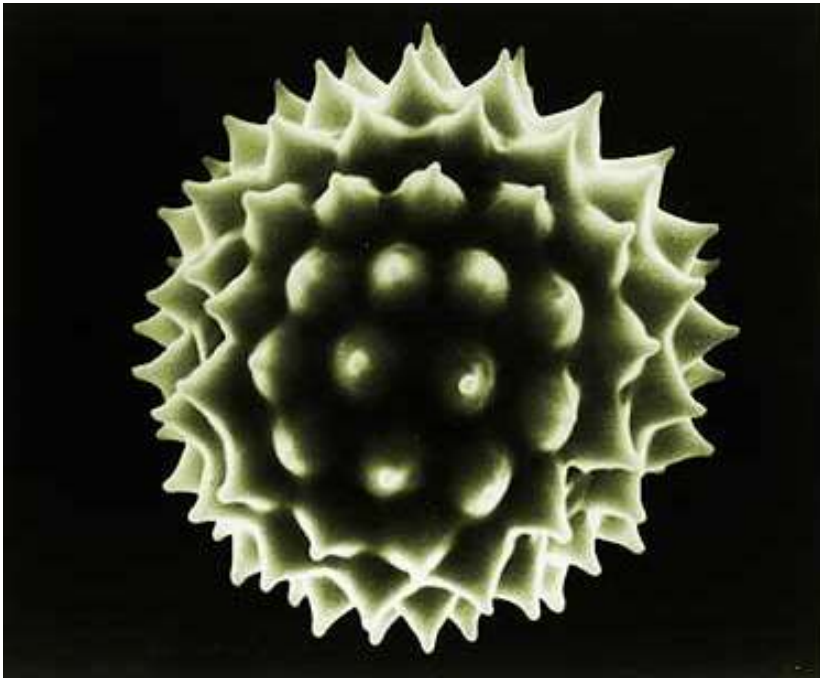
# Pine Bark



# Male Pine cones with Pollen grains



# Pollen Grains



# Female Pine cones



# Pine seed being dispersed



# Conifers





# Cycadophyta



# Gnetophyta - Welwitschia



# Gnetophyta - Ephedra



# Coniferophyta



# Female Pine cones



# Male Pine cones with Pollen grains



# Pine needles "leaves"



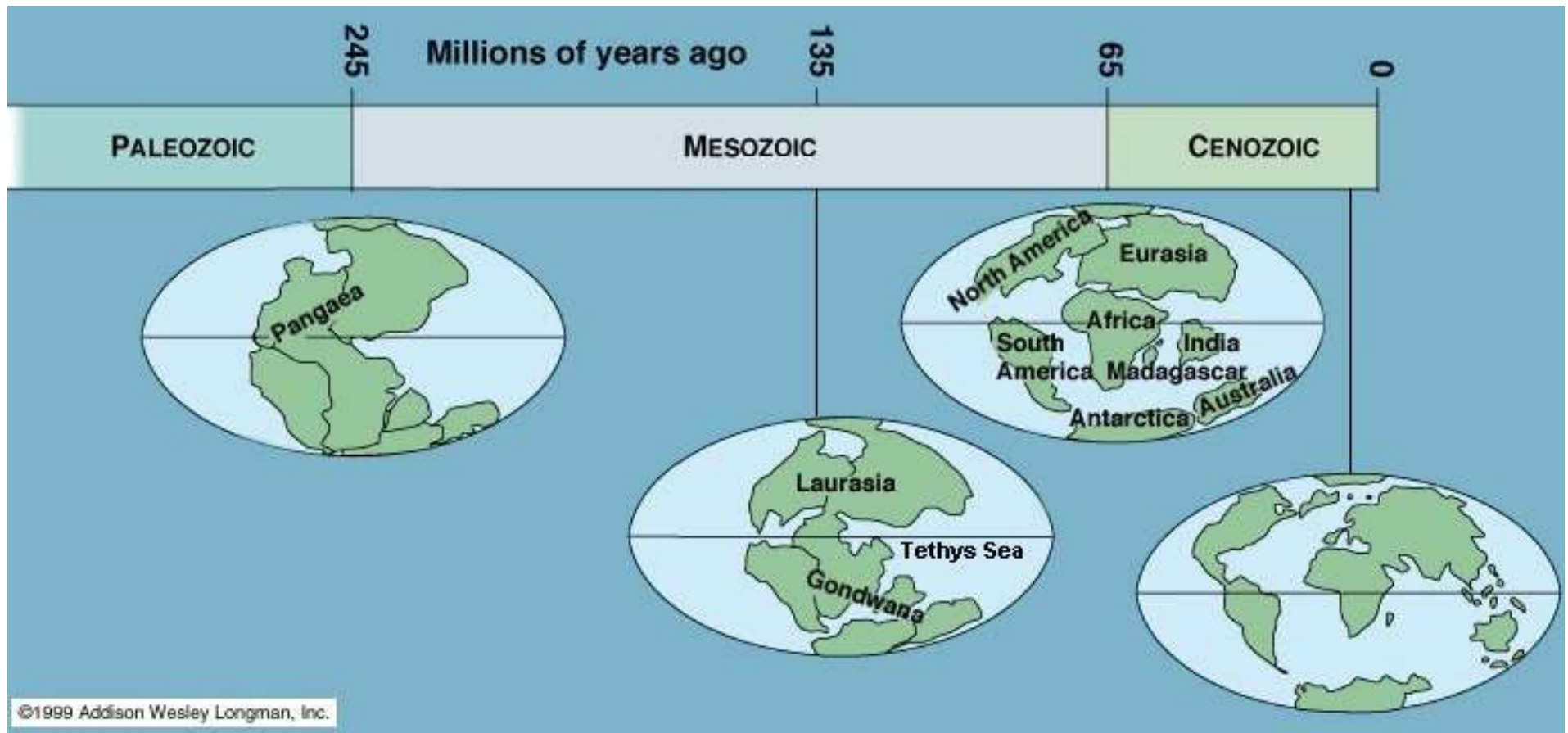
# Pre AP Biology

Plant Kingdom (8.6)

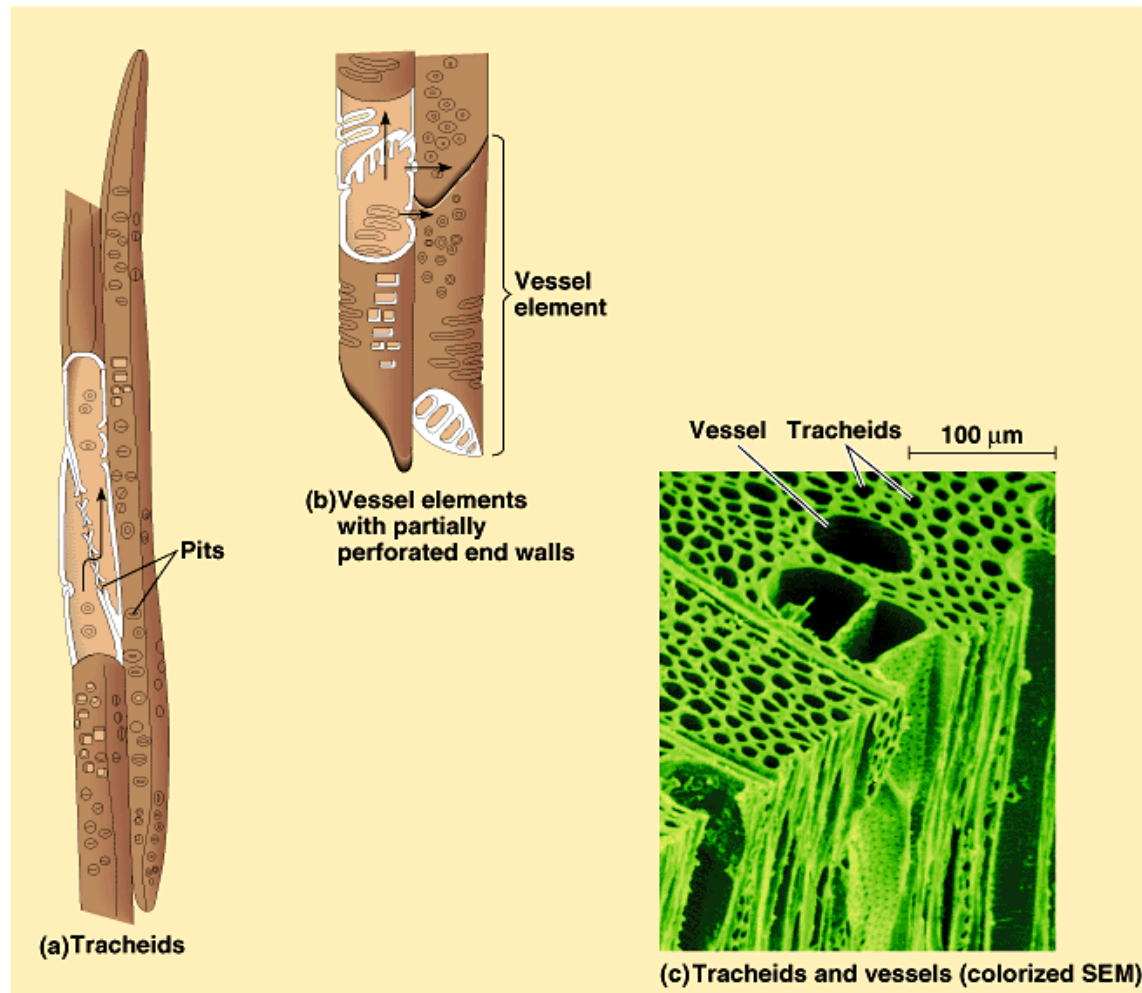
Part 5



# Pangaea separating – water returns in large quantities



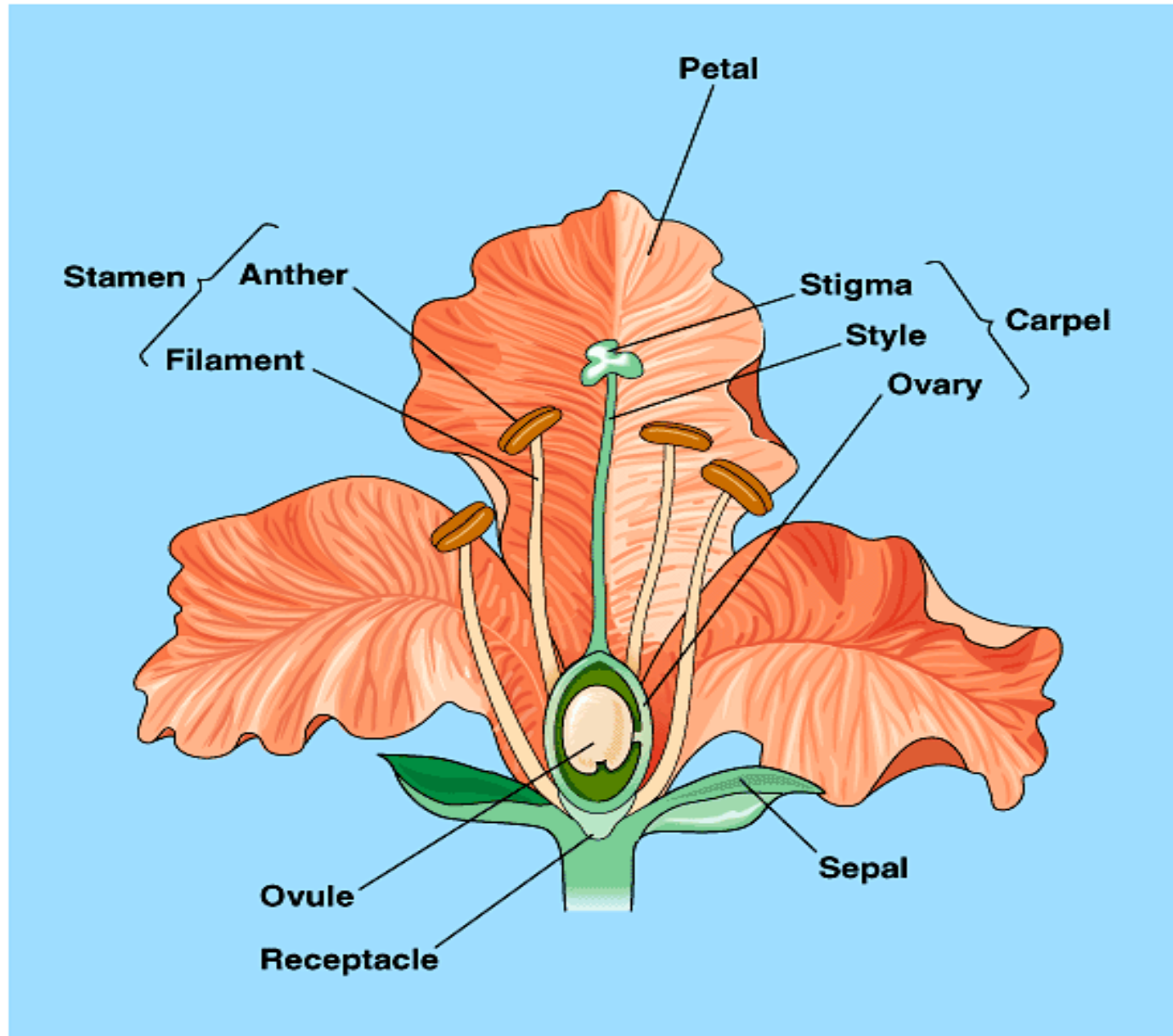
# Xylem – Vessel elements (More water uptake)



# Larger leaves (More photosynthesis)



# Flowers






# Fruit



# Types of fruits

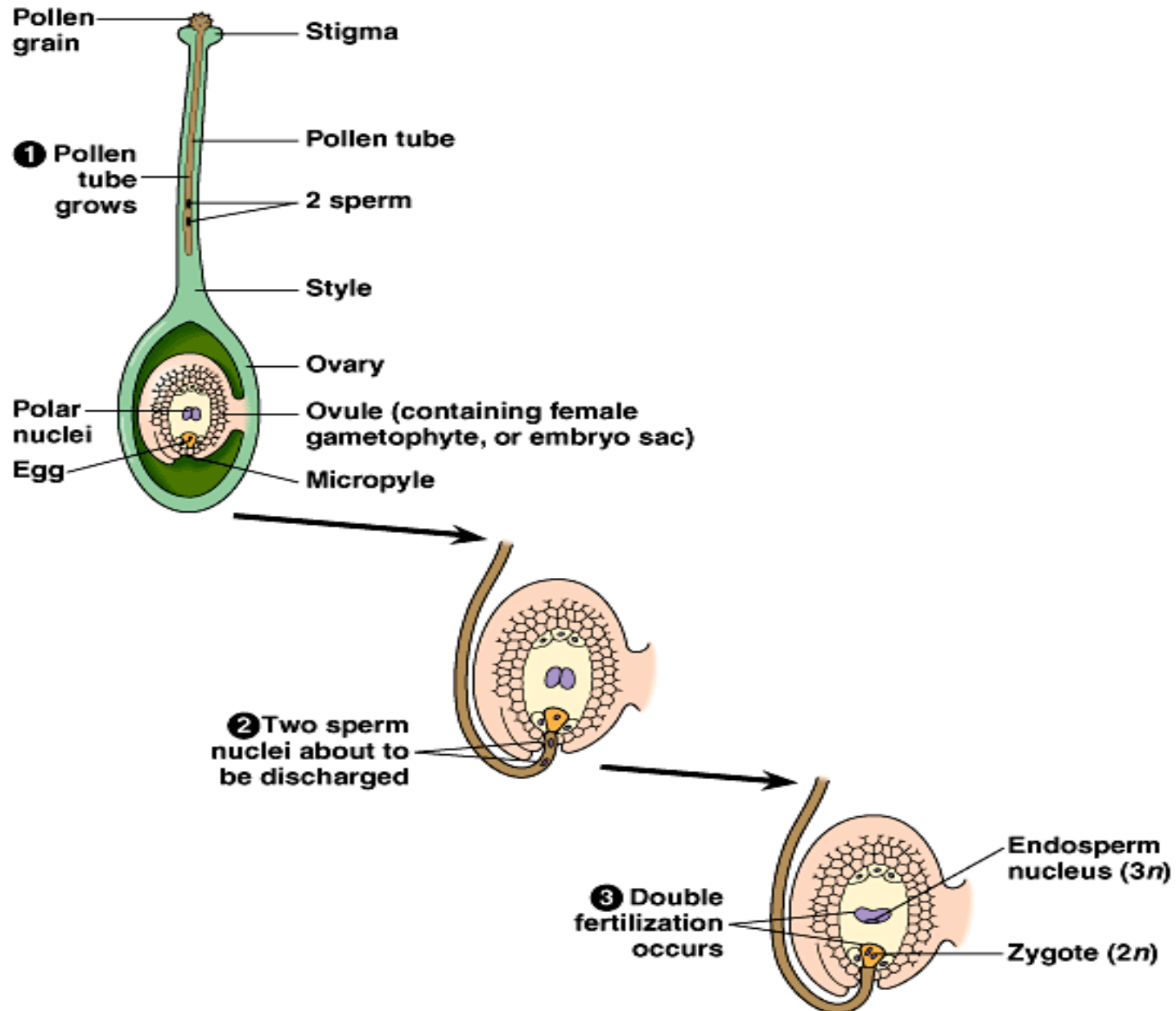
**Table 30.1 Classification of Fleshy Fruits**

Type of Fruit	Floral Origin	Example
Simple	Single ovary of one flower	Cherry 
Aggregate	Many ovaries of one flower	Raspberry 
Multiple	Many ovaries of many clustered flowers	Pineapple 

# Burr fruit with chestnut inside



# Pollination & Double Fertilization





# Magnoliids



# Monocots & Eudicots













**(e) Orchid (monocot)**



**(f) California poppy (eudicot)**

# Traits to know!

<b>Monocots</b>				
 <p>One cotyledon</p>	 <p>Veins usually parallel</p>	 <p>Vascular bundles usually complexly arranged</p>	 <p>Fibrous root system</p>	 <p>Floral parts usually in multiples of three</p>
Embryos	Leaf venation	Stems	Roots	Flowers
<b>Dicots</b>				
 <p>Two cotyledons</p>	 <p>Veins usually netlike</p>	 <p>Vascular bundles usually arranged in ring</p>	 <p>Taproot usually present</p>	 <p>Floral parts usually in multiples of four or five</p>