


Major Groups of Plants

Lecture 9

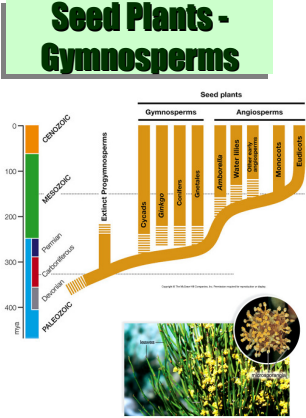
Learning Outcomes

- Major Groups of Plants
- Bryophytes
- Seedless Vascular Plants
- Gymnosperms
- Angiosperms
- Plant Evolution




Seed Plants - Gymnosperms

- Gymno = naked
- Sperm = seed
 - Seeds not enclosed in a fruit
- Seed
 - Sporophyte embryo plus food supply within protective seed coat
- Dormancy allows seeds to wait out harsh conditions
 - Winter
 - Summer drought



Gymnosperm Diversity

- Cycads
- Ginkgo
- Welwitschia
- Gnetum
- Ephedra



Conifers

- Cone-bearing trees
- Male pollen-cones
- Female seed-cones
- Leaves reduced to needles
 - Reduces water loss
- Bark and leaves protected by resin
 - Softwood
- Tallest trees in the world




Conifer Diversity





- Pinaceae
 - ~ 235 species
 - Pines, Spruce, Fir, Hemlock, Cedar, Larch
- Cupressaceae
 - ~135 species
 - Cypresses, Junipers, Redwood, Sequoia, Bald Cypress



Monocotyledons

- Class Liliopsida
- Parallel leaf veins
- One seed leaf (cotyledon)
- Fibrous (adventitious) roots
- Vascular bundles scattered
- Floral parts in 3








MONOCOTS			
Cotyledons	Veins in leaves	Flower parts	Arrangement of primary vascular bundles in stem
 One cotyledon	 Usually Parallel	 Usually in multiples of three	 Scattered

(Callitriche maculocarpa)

Dicotyledons

- Class Magnoliopsida
- Reticulate leaf venation
- Two seed leaves
- Taproot
- Vascular bundles in ring
- Floral parts in 4 or 5



DICOTS			
Two cotyledons	Usually netlike	Usually in fours or fives	In a ring
			

First Land Plants

- Ancestors green algae
- Land plants colonized land from freshwater margins
- Lower Devonian
 - 400-385 MYA
- Had to:
 - withstand desiccation
 - Waxy cuticle
 - Support own weight against gravity
 - Transport water
 - Xylem and lignin
- Early vascular plants
 - *Rhynia*



Moss Life Cycle Animation

- Moss Life Cycle (Sadava et al, Life)
- http://bcs.whfreeman.com/thelifewir/e9e/default.asp#542578_591882

—
