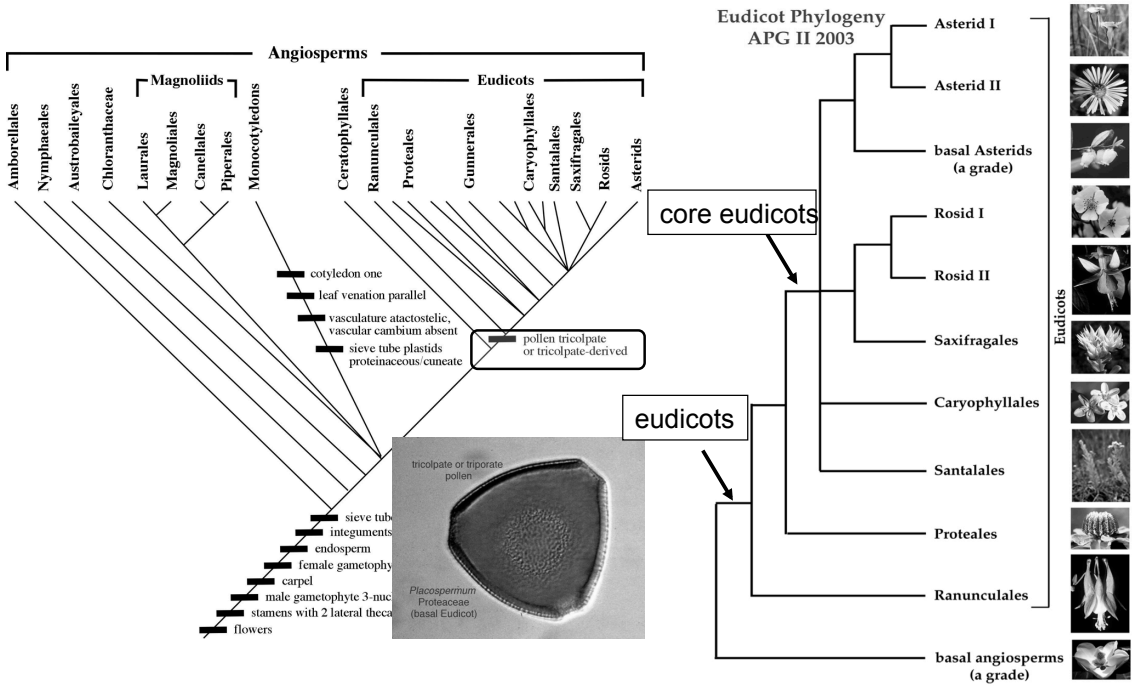
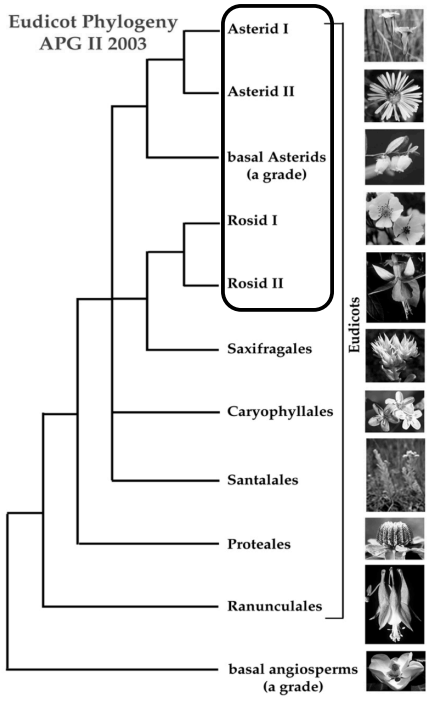
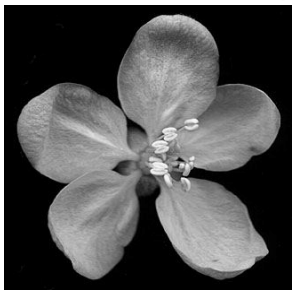
Eudicots: Rosids and Asterids

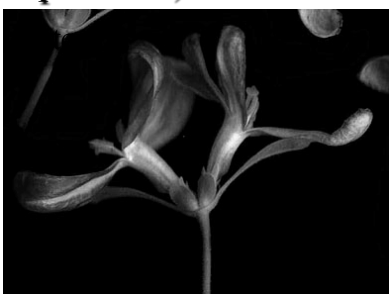


Eudicots: Rosids and Asterids



Vast majority of eudicots are Rosids (polypetalous) and Asterids (sympetalous)





Apiaceae – “Umbelliferae”

aromatic herbs with hollow stems

leaves strongly sheathing

dissected or compound leaves

CA 5 CO 5 A 5 $\overline{G}$ (2)

fruit dehiscent and splitting - schizocarp

Apiaceae – “Umbelliferae”

CA 5 CO 5 A 5 $\overline{G}$ (2)

5-merous w/ NO corolla tube
Schizocarp
Fruits 5-ribbed = generic difference

Formation of a ‘head’ (Asterid feature)

Flowers small in umbels, often compound
Female flowers often along edge of each umbellet

*Caryophyllaceae - Carnations

CA 5, (5) CO 5 A 5,10 G (2-5)

- 5 merous flowers, calyx fused +/-
- corolla not fused, often lobed

*Caryophyllaceae - Carnations

CA 5, (5) CO 5 A 5,10 G (2-5)

- free-central or axile placentation
- capsule fruit opening by teeth or valves

*Lamiaceae - mints

Huge cosmopolitan family of 267 genera and nearly 7000 species of herbs and sometimes shrubs or trees

- major family of Mediterranean climate regions
- strongly aromatic (mint, peppermint, sage, rosemary, thyme)
- square stems, opposite leaves
- flowers congested in verticels

Satureja in Greece

Mentha longifolia

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Satureja in Greece

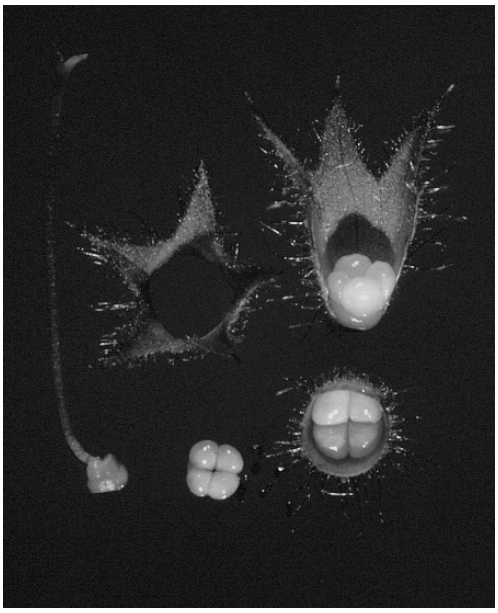
Mentha longifolia

*Lamiaceae - mints

CA (5) CO (2+3) A 4,2 G (2)

- flowers two-lipped (bilabiate)
- stamens 4 (or even 2)
- 2 carpels, gynobasic

- fruit - 4 nutlets



Galeopsis

Ericaceae - blueberry family

Worldwide family of subshrubs, shrubs, epiphytes, and small trees. Characteristic of **nutrient poor soils**; in Wisconsin common in bogs, acidic pine dominated forests, or sandy soils.

Symbiotic relationship with **mycorrhizal** relationship, forming **haustoria** - root to fungus connection, permits nutrient uptake by plants, carbon uptake by fungus.

Ericaceae now includes the totally fungus dependent **mycotrophs** - non chlorophyllous, all food and water from fungi

Leatherleaf in bog

Pinesap in pine forest

Ericaceae - blueberry family

Plants are generally evergreen, with tough, leathery leaves often **revolute** or inrolled along edge of leaf, with sunken stomata, and bottom of leaves often covered with protective hairs

Arctostaphylos
bearberry

Ledum
Labrador tea
Note revolute leaves

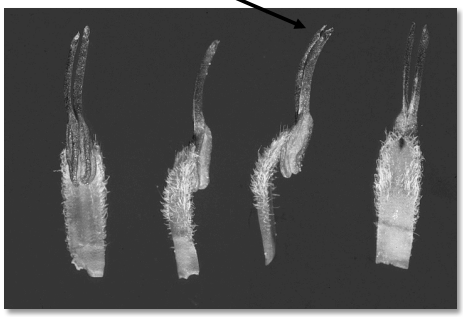
Chimaphila
shinleaf

Ericaceae - blueberry family

CA (4-5) CO (4-5) A 8-10 $\underline{\overline{G}}$ (4-5)

Calyx and corolla are fused, the **corolla tube** bell or vase shaped - most of our species are 5 merous

Stamens are 2X the number of petals; they often exhibit **terminal pores** for pollen release - rather than slits - for **buzz pollination** by bees



Ericaceae - blueberry family

Epigaea repens
Trailing arbutus

Gaultheria hispidula
creeping snowberry

Gaultheria procumbens
wintergreen

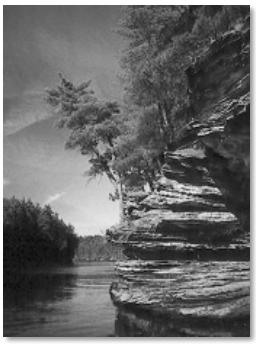
Ericaceae - blueberry family

Chamaedaphne calyculata
leatherleaf

Leatherleaf is often a dominant shrubby member of bogs. Has an extensive stem and root system under the peat. Leaves are glandular dotted. Fruit is a dry berry/capsule.

Ericaceae - blueberry family

Rhododendron lapponicum - lapland rosebay
Endangered

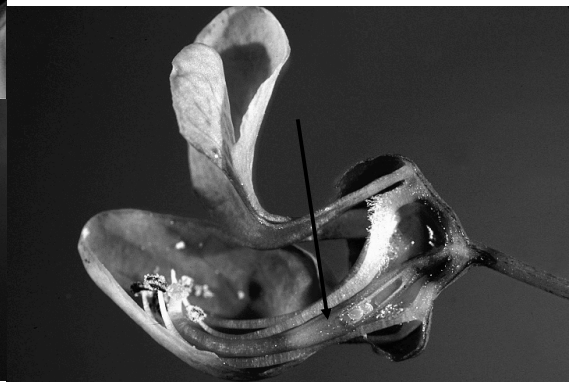


Circumboreal species found in Wisconsin only in driftless area and on cliffs along Wisconsin and Kickapoo River gorges

*Fabaceae - legumes

Three major characteristics

1. Monocarpic - single superior carpel



*Fabaceae - legumes

Three major characteristics

2. Legume - follicle but with 2 lines of suture

*Fabaceae - legumes

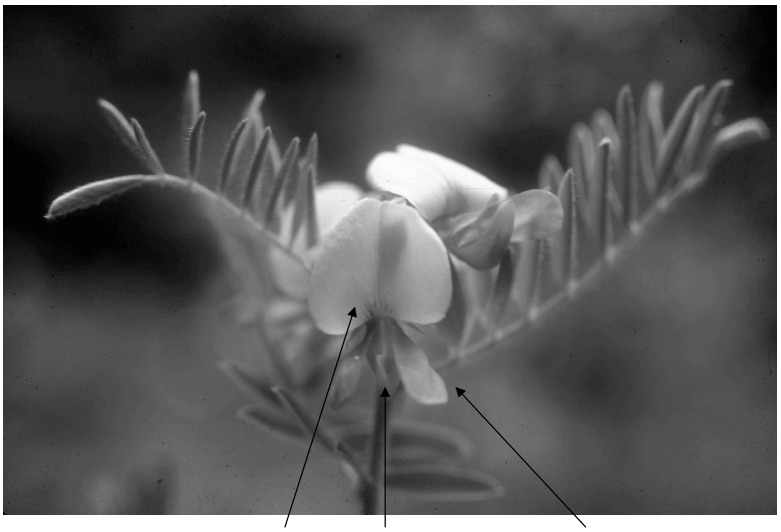
Three major characteristics

3. Alternate, compound leaves - (rarely simple)

*Faboid legumes

CA (5) CO 3+(2) A (9)+1 G 1

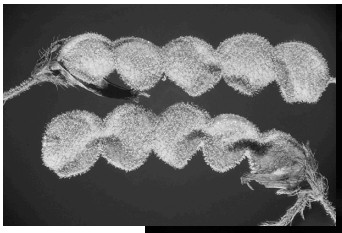
- calyx often fused
- banner petal behind lateral (wing) petals
- bottom keel petals often fused
- stamens diadelphous = 9 fused + 1 separate




Diadelphous

*Faboid legumes


Apios americana - groundnut




Baptisia bracteata - creamy wild indigo

Desmodium canadense - ticktrefoil

*Faboid legumes

• three important legume crops

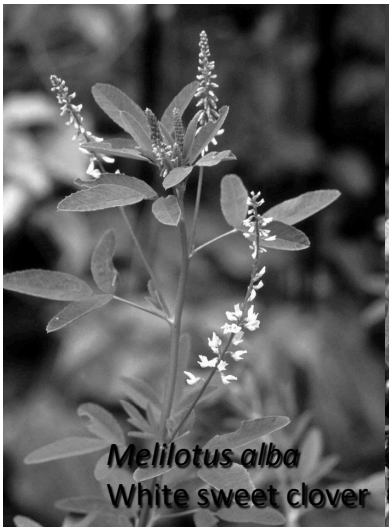
Pisum sativum -
pea

Phaseolus vulgaris -
common bean

Glycine max
soybean

*Faboid legumes

• three important "clover" or "alfalfa" species from Eurasia - now naturalized



Melilotus alba
White sweet clover

Trifolium pratense
red clover

Medicago sativa
alfalfa

Ericaceae - blueberry family

V. macrocarpon
cranberry

Vaccinium myrtilloides
Velvet-leaf blueberry

Blueberries and cranberries are inferior ovaried and berry fruited

Vaccinium angustifolium
Lowbush blueberry

Ericaceae - blueberry family

Similar to blueberries with which it is often confused; but flowers mainly reddish, fruits mature to more blackish color and more crunchy with 10 “stones”, reddish resin dots on leaves

Gaylussacia baccata
huckleberry