A close-up photograph of a purple rose flower. The petals are a deep purple color with visible veins. The center of the flower is filled with numerous yellow stamens, each with a small, rounded anther. The background is dark, making the flower stand out.

Diversity of Wisconsin Rosids

. . . roses, currants, raspberries . . .

we will be seeing, in the next few lectures, many of
the woody plants (trees/shrubs) present at your sites

Trees & Shrubs ID Helps



Mac

iPad

iPhone

Watch

TV

Music

Support

App Store Preview

This app is only available on the App Store for iOS devices.

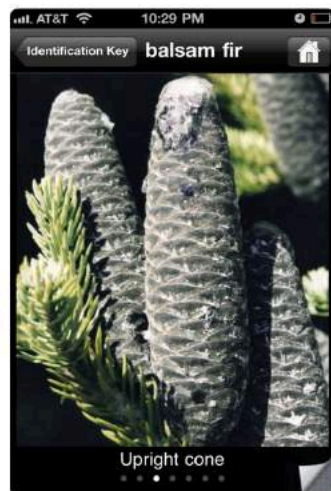


Key to Woody Plants of Wisconsin Forests

Field Day Lab - University of Wisconsin - Madison

★★★★★ 15 Ratings
Free

iPhone Screenshots



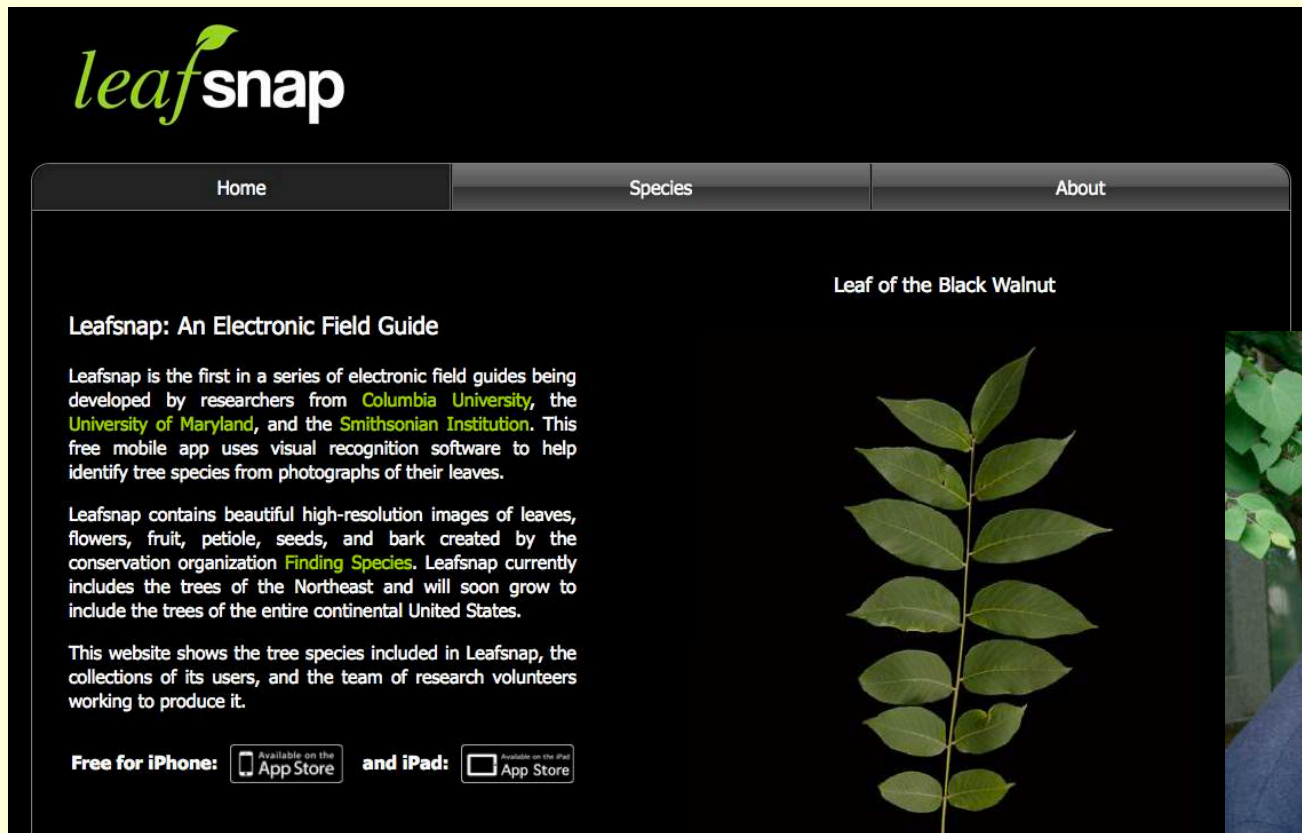
Key to Woody Plants of Wisconsin Forests

Authored by Catherine L. Woodward, Ph.D.
UW-Madison Institute for Biology Education

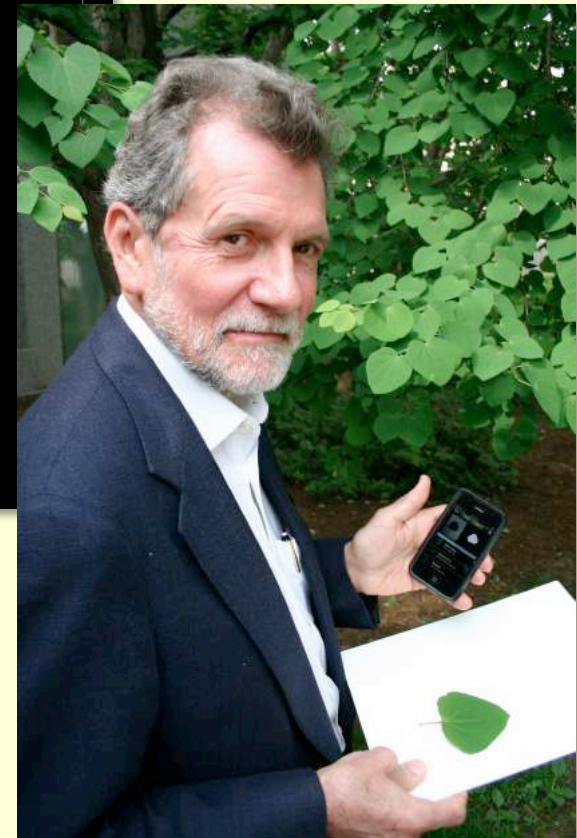
Developed by David Gagnon
UW-Madison Division of Information Technology
© 2011 Wisconsin Environmental Education Board



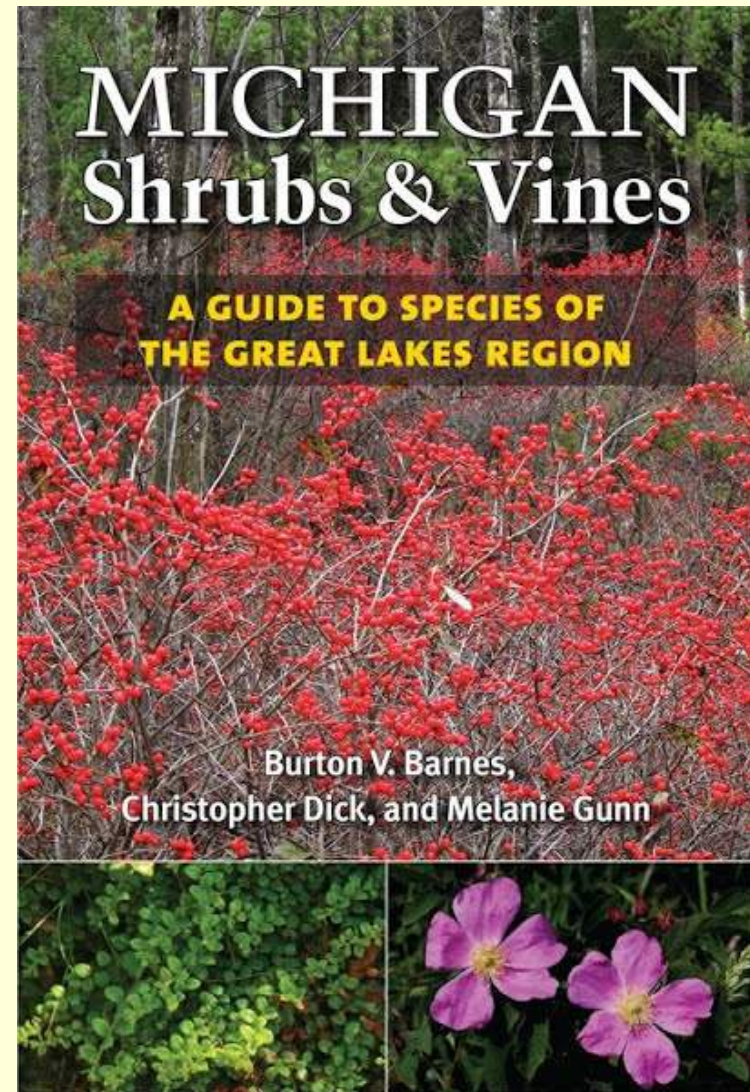
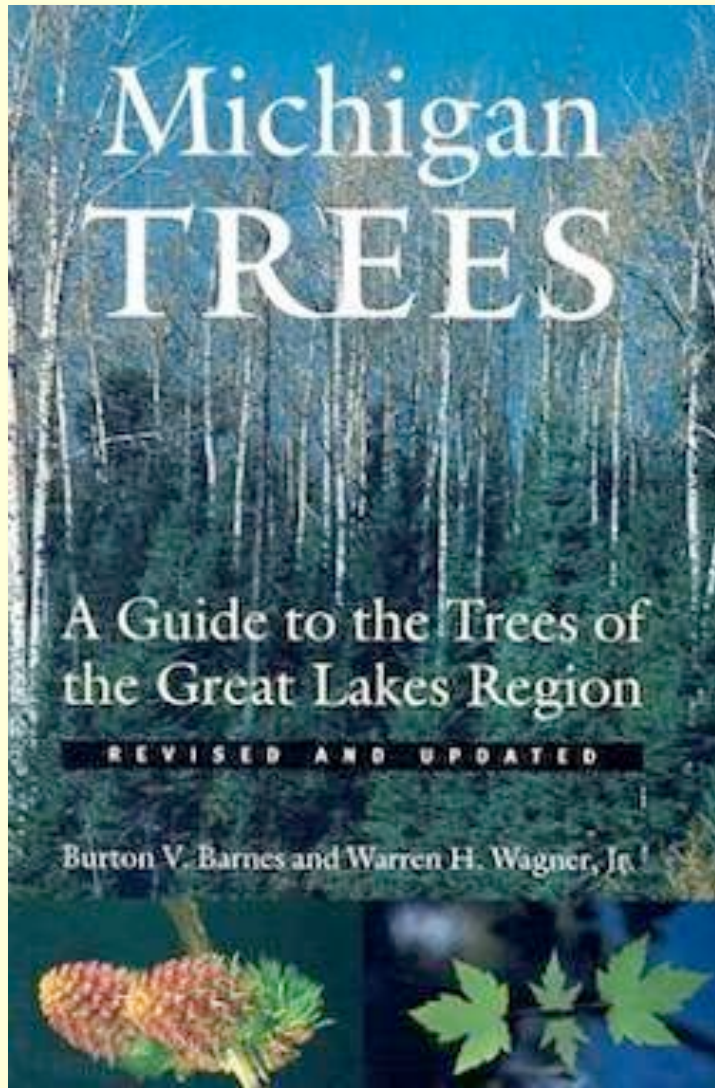
Trees & Shrubs ID Helps



*John Kress –
Smithsonian Institution*



Trees & Shrubs ID Helps



Trees & Shrubs ID Helps



Trees of Wisconsin



This site is intended as a resource for those interested in the 130 species of trees growing outside of cultivation in Wisconsin. See the text at the beginning of the key below for an explanation of the number. Cultivated species are not covered in this web site, unless they also escape and reproduce on their own. A page is provided for each Wisconsin tree species with photos and descriptions. A key and a glossary are provided to help with their identification and an introduction to tree and shrub identification is also provided for beginners.

It may be entertaining to compare unknown plants to pictures of known species, but it is a very risky business to identify them in that manner. If you are serious about learning the identity of plants (i.e. if it is important that the answer you arrive at is correct), you must learn to use one of the many keys available for that purpose. Photos can provide insight into the various terms used in the keys, but individual leaves, tree shapes, bark patterns, etc are so variable that no picture can adequately represent any particular species. Consider this example of extreme variation in three leaves from the same branch of a [White Mulberry](#) tree, or this selection of leaves taken from a single branch of a [Thornapple](#), or a branch of a [Choke Cherry](#).

One of the difficulties in learning to identify trees rests in the common desire among beginners for a single character that will distinguish a particular species. Because of the highly variable nature of plants, it is frequently necessary to consider several characters to make a reliable identification. That is why keys are essential. They can describe combinations of characters and a range of possibilities more accurately than is possible in a picture.

- [introduction](#) to trees and shrubs
- [key](#) to the trees of Wisconsin
- list of trees sorted by [Latin name](#) or [common name](#)
- [glossary](#) of terms related to trees and shrubs



Shrubs of Wisconsin



The "Shrubs of Wisconsin" site is under construction and is incomplete. However the list of shrubs is complete, and there are photos of most common shrub species that may be useful, especially to the Field Botany students.

Proceed to the list of shrubs, sorted by [Latin name](#) or [common name](#)

[UWGB Herbarium home](#) with links for trees, ferns, wetland plants, invasive plants and more.

Rosids

Rosids are one of the two large groups of dicots; the other group are the **Asterids**



Rosids:

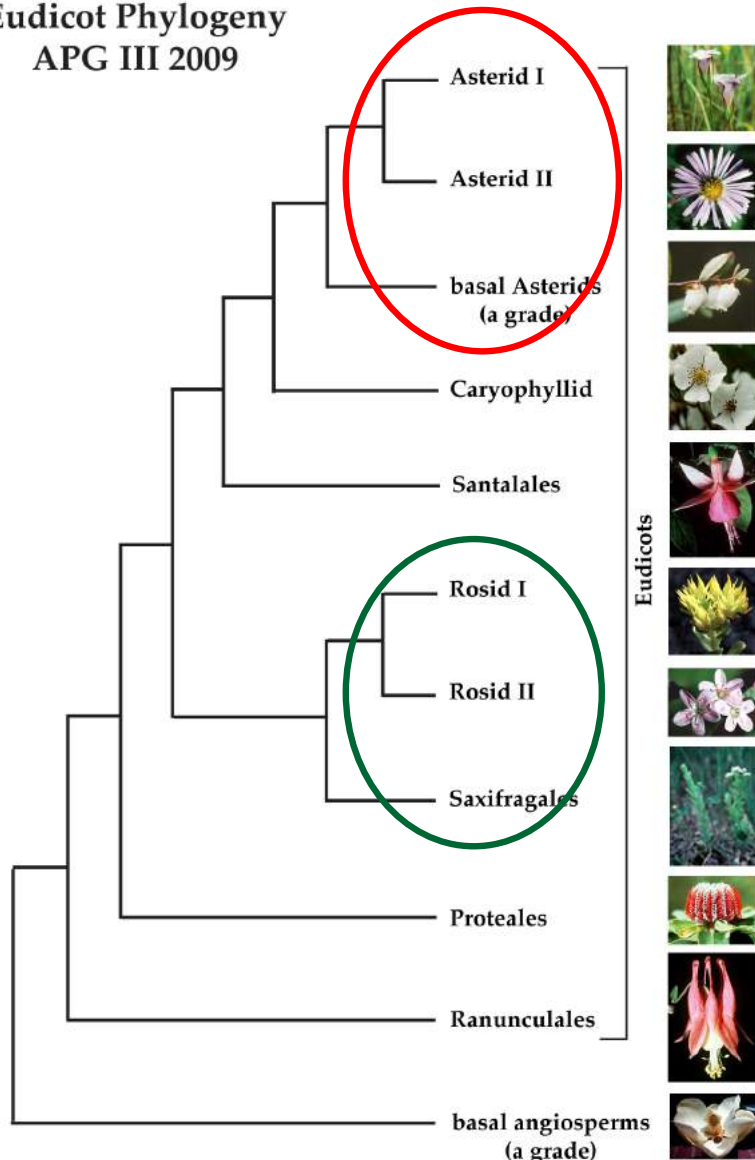
Separate petals



Asterids:

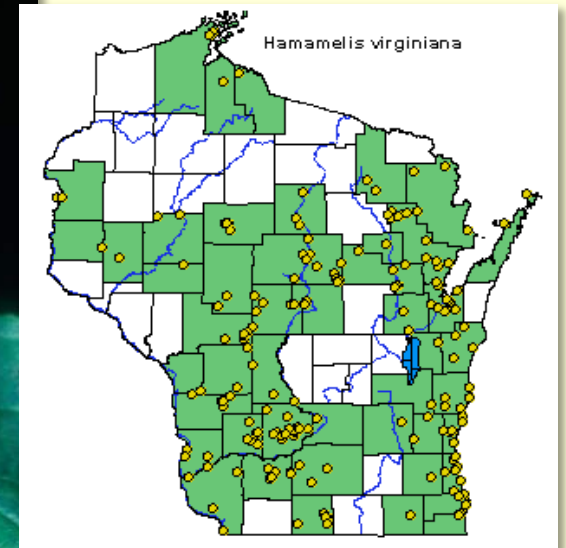
Fused petals

Eudicot Phylogeny APG III 2009



Hamamelidaceae - witch hazel family

Trees and shrubs in subtropical and temperate areas but only 1 species in Wisconsin - witch hazel found in rich deciduous woods. A very distinctive shrub with asymmetrical crenate leaves and late-blooming flowers.



Hamamelis virginiana
Witch hazel

Hamamelidaceae - witch hazel family

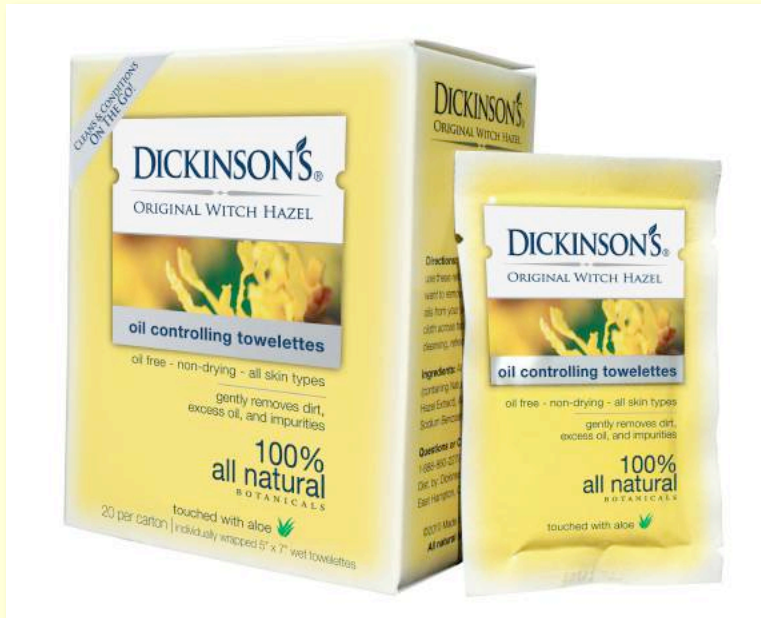
Simple, alternate leaves on flattened branches; these leaves usually with palmate venation or at least pronounced basal veins



Hamamelis virginiana
Witch hazel

Hamamelidaceae - witch hazel family

Witch hazel yields an astringent and soothing lotion for cuts and bruises, hemorrhoids



18th century



20th century

Water diviners favor witch hazel for their dowsers (the divining rod to find water underground)

Hamamelidaceae - witch hazel family

The flowers 4 merous (the family can be five merous), and **insect pollinated in the fall** (images from Sept)

CA 4-5 CO 4-5 A 4-5 \overline{G} (2)

Petals are ribbon-like

4 stamens opposite the sepals, but 4 small staminodia are opposite the petals

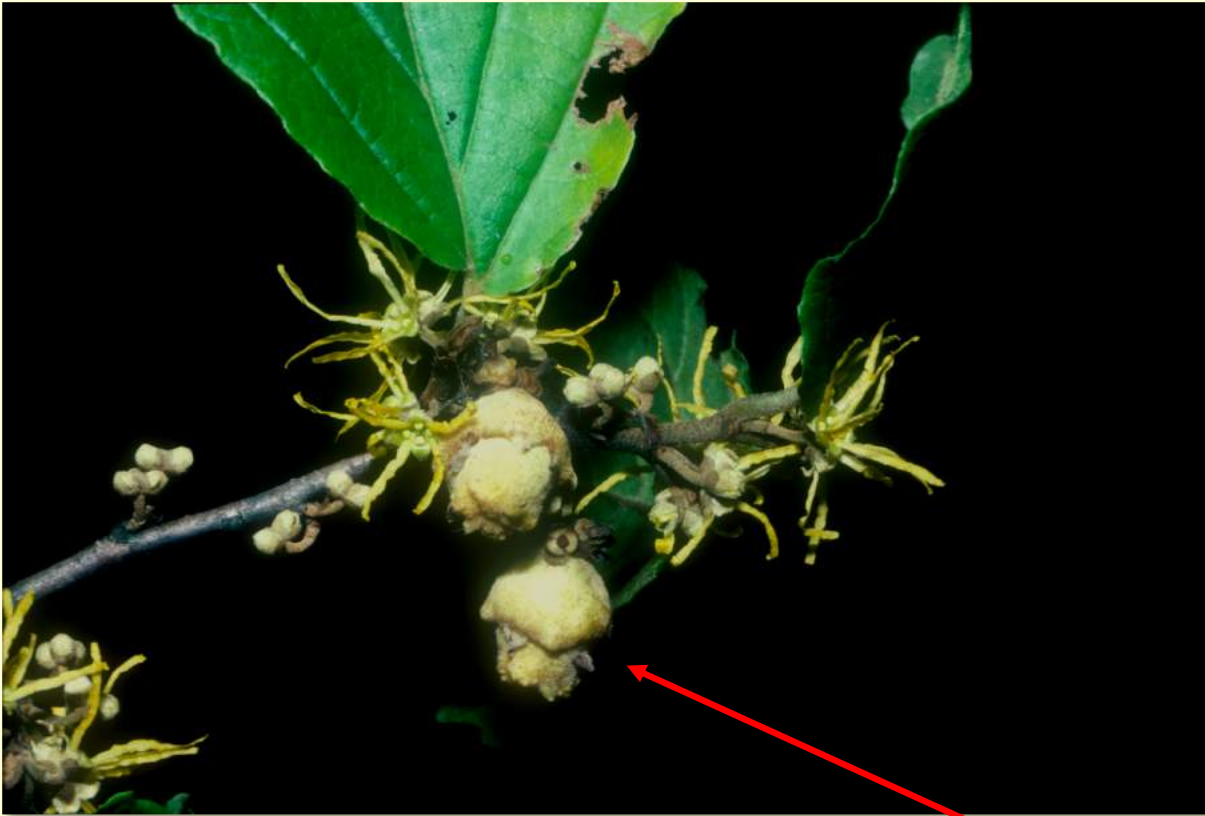


Hamamelis virginiana
Witch hazel



Hamamelidaceae - witch hazel family

CA 4-5 CO 4-5 A 4-5 \overline{G} (2)



Ovary is generally inferior or half-inferior with the tops somewhat separated

The two locules each have one or more ovules

Fruit woody, dehiscent at top

Hamamelis virginiana
Witch hazel

Previous year's fruit

Crassulaceae - stonecrop family



Sedum acre - Gold-moss stonecrop, Yellow sedum

Leaf succulent herbs or small shrubs

Common as potted plants or in rock-gardens

CAM (crassulacean acid metabolism) type of photosynthesis adaptive in xeric environments

All Wisconsin species are introduced, and some invasive – mainly in sandy sites

Crassulaceae - stonecrop family



CA 5 CO 5 A 10 G 5

Flowers typically 5 merous with stamens 2X number of sepals (3,4, or 6 merous species occur)

Carpels are essentially separate and produce follicles when mature

Nectary scales usually evident at base of each carpel

Sedum acre - Gold-moss stonecrop, Yellow sedum

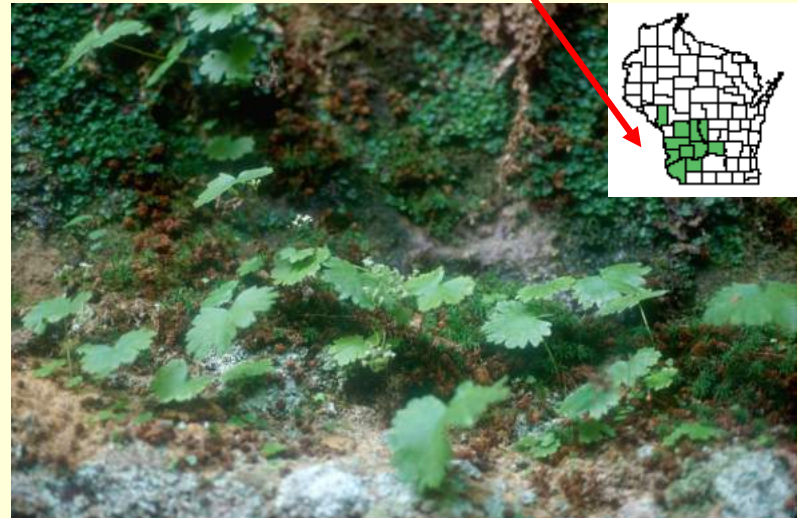
Saxifragaceae - saxifrage family



Micranthes (Saxifraga)
in swampy woods

Major distinctive vegetative feature is the usual set of **basal leaves** which are often gland-tipped along the edges.

Most prefer wet woods, swampy conditions, or drippy cliffs as in the driftless region.



Sullivantia
under dripping cliffs

Saxifragaceae - saxifrage family



Micranthes (Saxifraga)
in swampy woods

CA 5 CO 5 A 5or10 G (2)

5 merous flowers

Superior pistil is made of 2 carpels, usually separated, at least from the middle up; perigynous

hypanthium often present

Fruit 2 follicles or 1 splitting capsule

2 styles



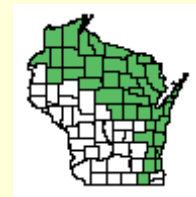
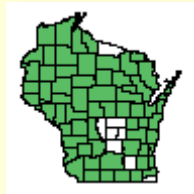
Saxifragaceae - saxifrage family



Note cup-like
hypanthium



Mitella diphylla
Bishop' s-cap
or miterwort
[with 2 stem leaves]



Mitella nuda
Small Bishop' s-cap



Saxifragaceae - saxifrage family

Tiarella cordifolia
Foamflower
Endangered boreal sp.



Heuchera richardsonii
prairie alumroot



Grossulariaceae - currant family

One genus, 150 species of shrubs from the N Hemisphere and Andes

Characterized by lobed leaves, raceme inflorescences, and fleshy fruits (currants and gooseberries)



Ribes americanum - American black currant

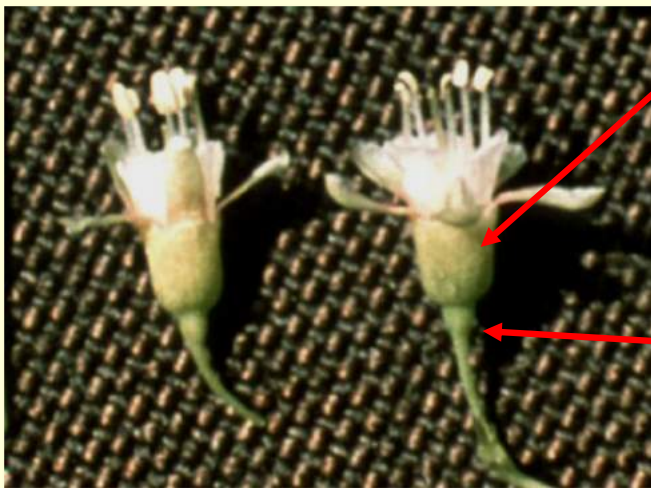
Grossulariaceae - currant family

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

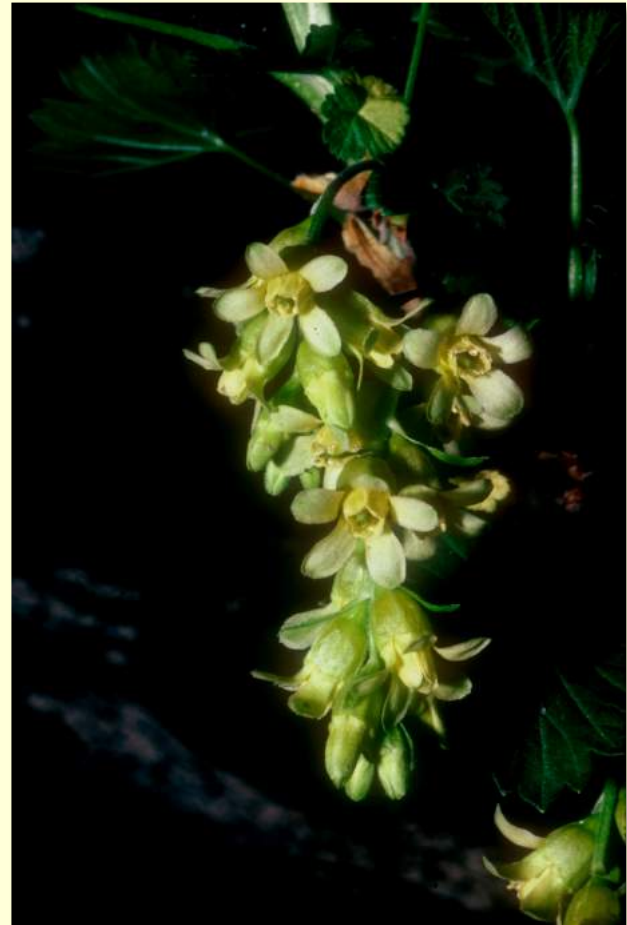
Flowers 5 merous with sepals large and petals smaller

Gynoecium inferior of 2 fused carpels

well developed **hypanthium**



ovary



Grossulariaceae - currant family

Currants identified by long racemes of many flowers



Ribes americanum
American black currant



Ribes triste - swamp currant

Grossulariaceae - currant family

Gooseberries identified by paired flowers; stems often spiny



Ribes missouriense
Missouri gooseberry



Ribes cynosbati - prickly gooseberry, dogberry

common 401 final exam shrubs!

Rosaceae - rose family

Rosaceae is a large family distributed worldwide but most common in the north temperate regions - important fruit family

- herbs, shrubs, or trees
- simple, pinnately compound or palmately compound leaves



Stipules well developed in compound leaves

Rosaceae - rose family

CA 5 CO 5 A_{∞} G [variable!]

Flowers are showy, 5 merous, with numerous stamens

Gynoecium is variable and used to define subfamilies

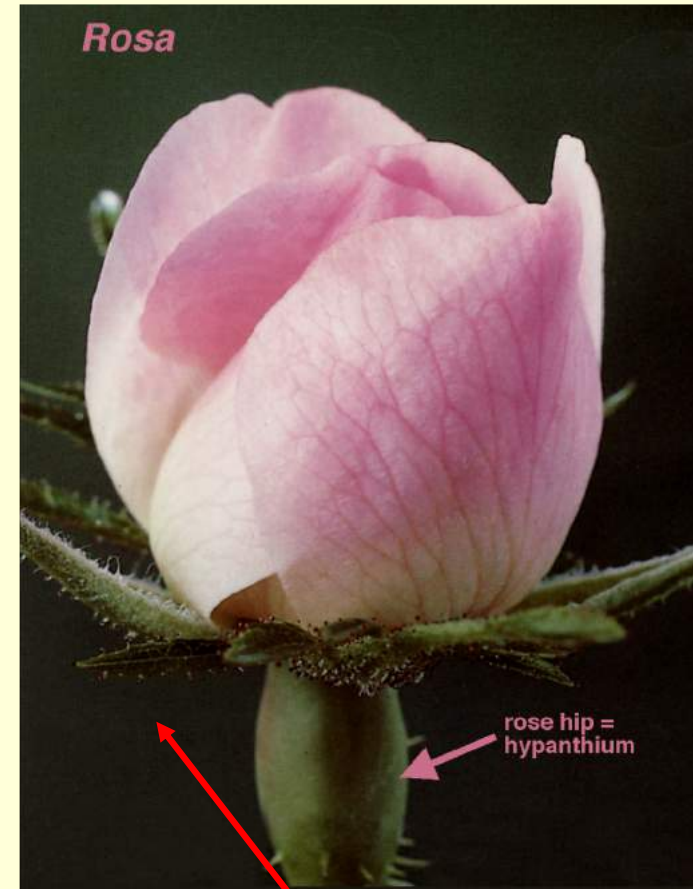


Rosaceae - rose family

CA 5 CO 5 A ∞ G [variable!]

Flowers are showy, 5 merous, with numerous stamens

Gynoecium is variable and used to define subfamilies



Hypanthium is present to some degree in all these forms

Bracts on calyx (**epicalyx**) often present

Rosaceae - rose family

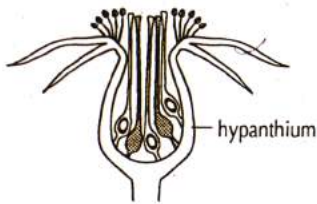
Subfamily Spiraeoideae



Spiraea

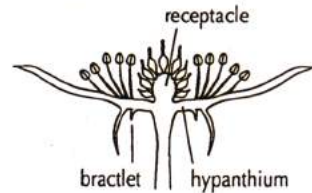
gynoecium = apocarpic
fruit = follicles

Subfamily Rosoideae



Rosa
(rose)

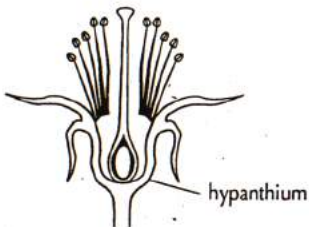
gynoecium = apocarpic
fruit = achenes



Fragaria
(strawberry)

gynoecium = apocarpic
fruit = aggregate of achenes

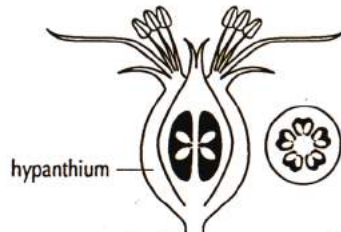
Subfamily Prunoideae



Prunus
(cherry)

gynoecium = monocarpic
fruit = drupe

Subfamily Maloideae



***Pyrus* [Malus]**
(apple)

gynoecium = syncarpic
fruit = pome

The gynoecium is variable as we will see and has been used to define 4 main groups

1. spiraea (spiraea, nine-bark)

2. rose (rose, strawberry)

3. cherry (cherry, plum)

4. apple (apple, pear, hawthorn)

Gynoecium variability encompasses size of receptacle, position of ovary, size of hypanthium, and the resulting fruit types:

Rosaceae - rose family

Subfamily Spiraeoideae



Spiraea

gynoecium = apocarpic
fruit = follicles

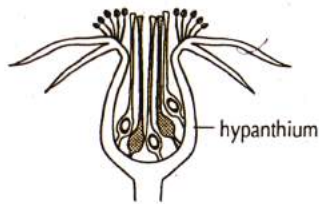
follicles



drupelets



Subfamily Rosoideae



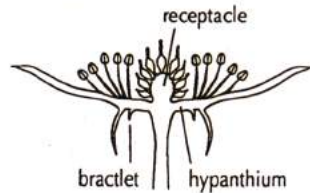
Rosa
(rose)

gynoecium = apocarpic
fruit = achenes

achenes



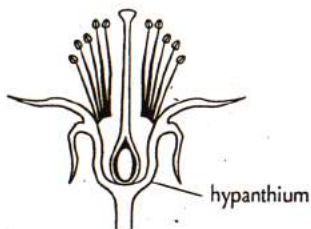
aggregate of
achenes



Fragaria
(strawberry)

gynoecium = apocarpic
fruit = aggregate of achenes

Subfamily Prunoideae



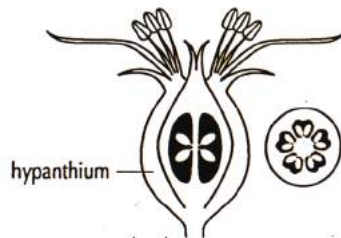
Prunus
(cherry)

gynoecium = monocarpic
fruit = drupe

drupes



Subfamily Maloideae



***Pyrus* [Malus]**
(apple)

gynoecium = syncarpic
fruit = pome

pomes



Rosaceae – spiraea & relatives



CA 5 CO 5 A ∞ G 2-8

apocarpic, superior pistils
short hypanthium
follicle fruits

Subfamily Spiraeoideae



Spiraea

gynoecium = apocarpic
fruit = follicles



Physocarpus opulifolius - ninebark

Rosaceae – spiraea & relatives

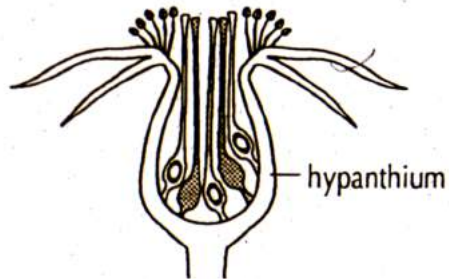


Spiraea alba - meadow-sweet



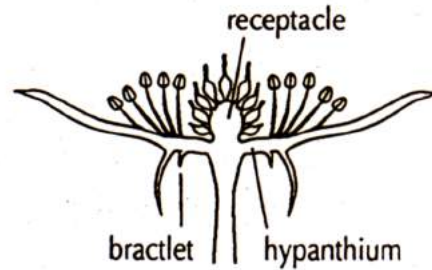
Spiraea tomentosa - hardhack

Rosaceae – rose & relatives



Rosa
(rose)

gynoecium = apocarpic
fruit = achenes



Fragaria
(strawberry)

gynoecium = apocarpic
fruit = aggregate of achenes

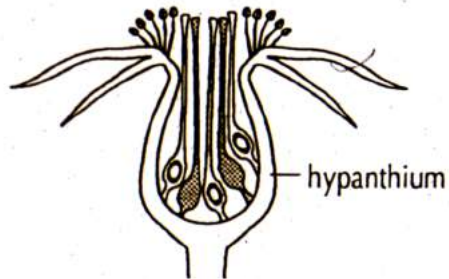
CA 5 CO 5 A_{∞} G_{∞}

Herbs mostly with compound leaves

Plants with **stolons** (running stems above ground) or running rhizomes

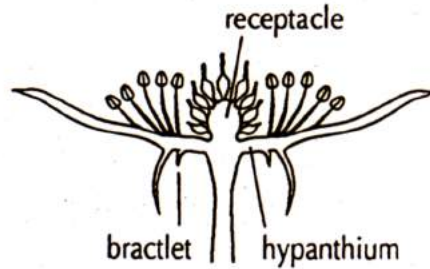


Rosaceae – rose & relatives



Rosa
(rose)

gynoecium = apocarpic
fruit = achenes



Fragaria
(strawberry)

gynoecium = apocarpic
fruit = aggregate of achenes

CA 5 CO 5 A ∞ G ∞

Herbs mostly with compound leaves

Plants with **stolons** (running stems above ground) or running rhizomes

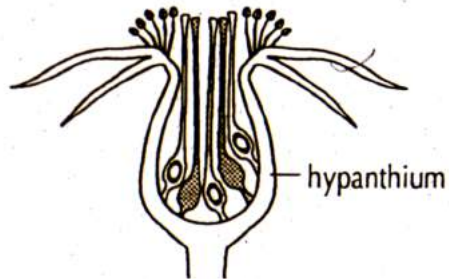
Flowers apocarpic with many carpels

Hypanthium well-developed
or **receptacle elongated**

One-seeded **achenes**

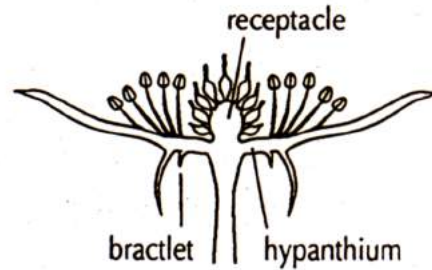


Rosaceae – rose & relatives



Rosa
(rose)

gynoecium = apocarpic
fruit = achenes



Fragaria
(strawberry)

gynoecium = apocarpic
fruit = aggregate of achenes

CA 5 CO 5 A ∞ G ∞

Achenes often modified into **aggregate** of achenes (from one flower) as in the strawberry or fleshy **drupelets** as in raspberry, dewberry



Rubus idaeus - American raspberry



Fragaria sp. - strawberry

Rosaceae – rose & relatives



Fragaria virginiana - wild strawberry



Geum triflorum - prairie smoke



Rosaceae – rose & relatives



Agrimonia gryposepala - common agrimony, harvest lice

2 achenes, but hypanthium disperses as a unit with “velcro”-like barbs from top of hypanthium

Rosaceae – rose & relatives



Potentilla anserina
[*Argentina anserina*]
silverweed

Potentilla simplex
Common cinquefoil

Rosaceae – rose & relatives



Rubus parviflorus
thimbleberry

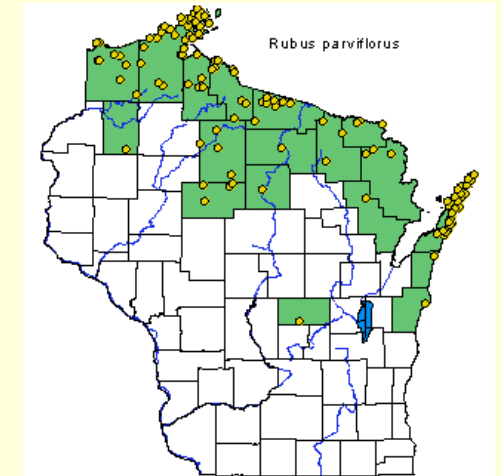


Rubus hispidus
swamp dewberry

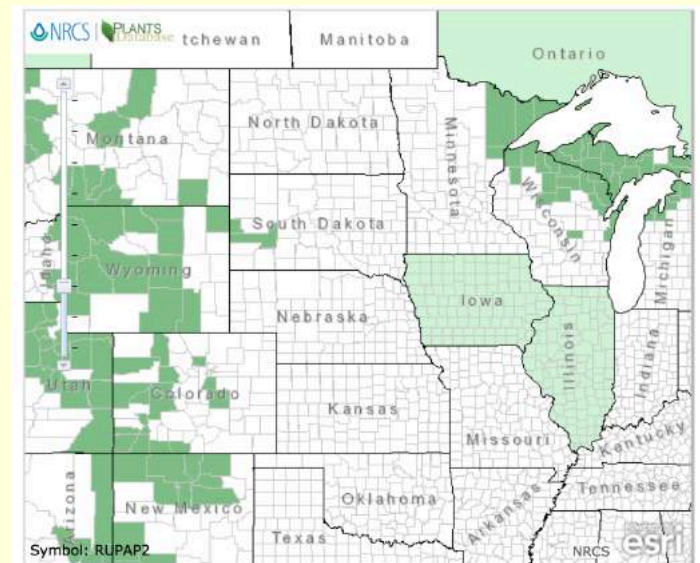
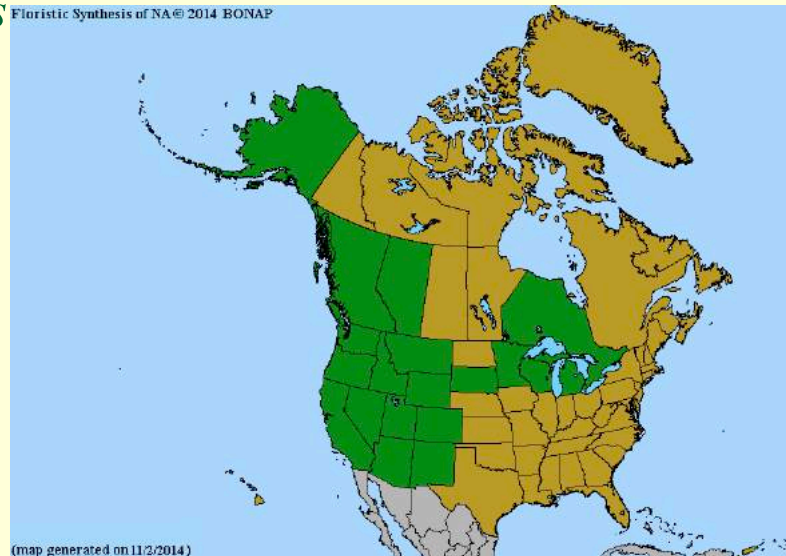


Rubus allegheniensis
blackberry

Rosaceae – rose & relatives



Rubus parviflorus
thimbleberry



Great Lakes – western North American disjunct pattern

Rosaceae – rose & relatives



Rosa rugosa
Beach rose



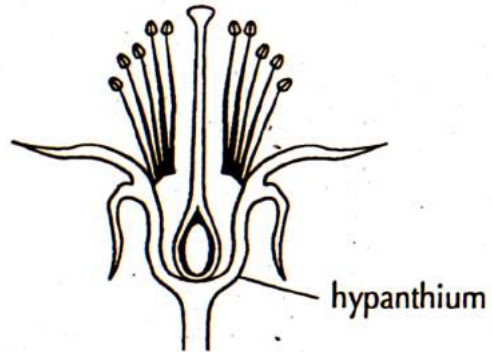
Rosa palustris
Swamp rose



Rosa multiflora
Multiflora rose
Invasive weed

Rosaceae – cherry & relatives

Subfamily Prunoideae



Prunus
(cherry)

gynoecium = monocarpic
fruit = drupe

CA 5 CO 5 A ∞ G 1

Shrubs and trees with simple leaves, often with glands along petiole (cherries, plums, peaches)

Gynoecium superior with **one carpel** = **monocarpic**

Fruit a **drupe** = fleshy, with one bony seed

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Rosaceae – cherry & relatives



Prunus serotina
wild black cherry



Prunus virginiana
choke cherry



Rosaceae – cherry & relatives



Prunus pumila - sand cherry

Rosaceae – cherry & relatives



Prunus americana
Wild plum



common 401 final exam shrub!

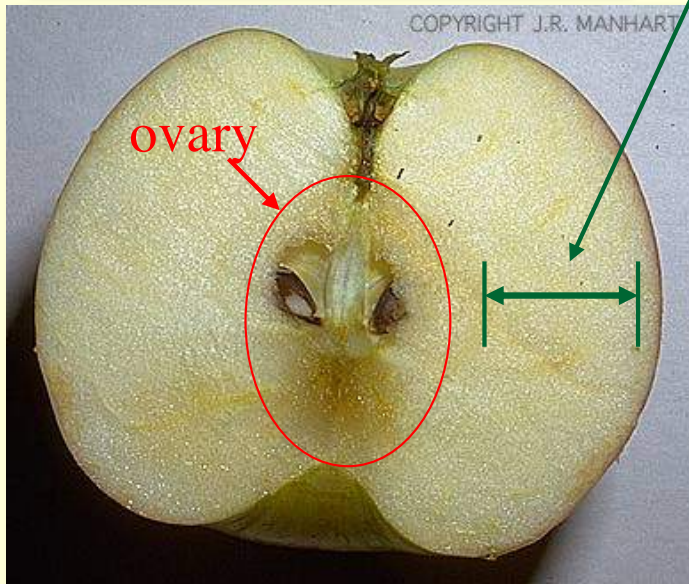
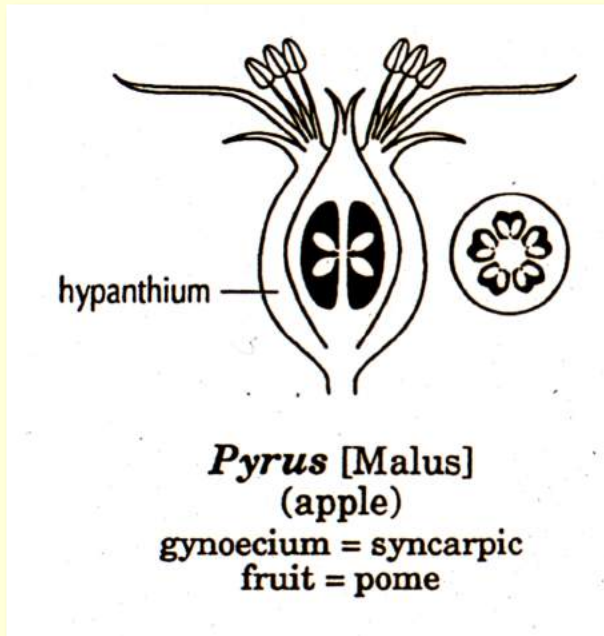
Rosaceae – apple & relatives

CA 5 CO 5 A ∞ \overline{G} (3-5)

Shrubs or trees with showy 5 merous flowers

Gynoecium inferior of 3 to 5 fused carpels

Hypanthium thickens in fruit to form **pome** fruit



Malus pumila (*Pyrus malus*) - apple

Rosaceae – apple & relatives



Pyrus communis
Pear (introduced)

Aronia melanocarpa
black chokeberry



Rosaceae – apple & relatives

Amelanchier laevis
Serviceberry, Juneberry



common 401 final exam shrub!

Rosaceae – apple & relatives



Crataegus crus-galli - cockspur hawthorn



Crataegus mollis - downy hawthorn