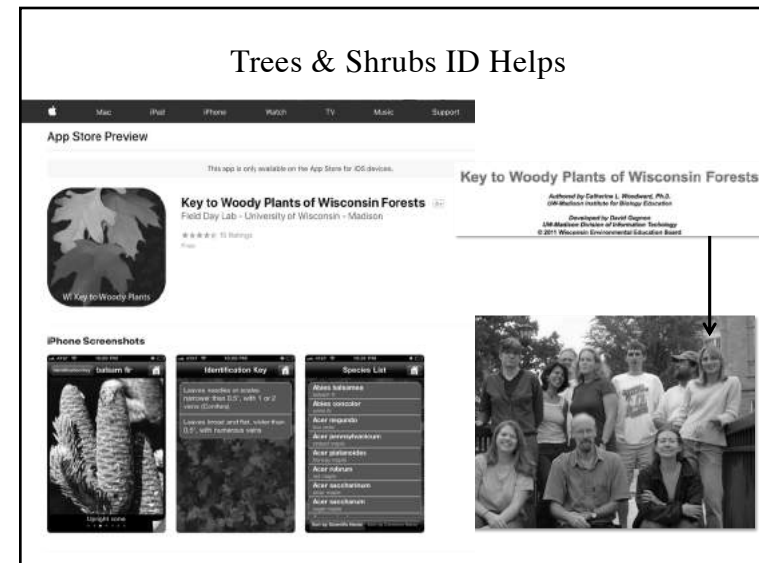


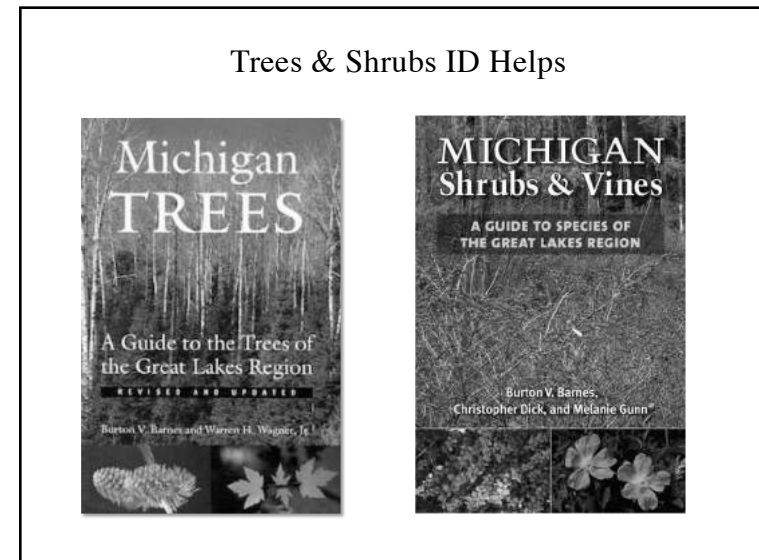
1



2




3



4

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 their purposes. 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 *Shasta Daisy*.

One of the difficulties in learning to identify trees lies 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

*Gary Fewless – UW
Green Bay Herbarium*



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.

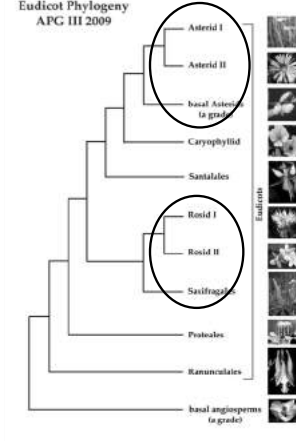
Proceed to the list of shrubs, sorted by Latin name or common name

UWOB Herbarium home with links for trees, ferns, wetland plants, invasive plants and more.

5


Rosids

Eudicot Phylogeny
APC III 2009




The tree shows Eudicot Phylogeny (APC III 2009). The Rosids group is circled and includes Rosid I, Rosid II, and Saxifragales. The Asterids group is also circled and includes Asterid I, Asterid II, and basal Asterids (in grade). Other groups shown include Caryophyllid, Santalales, Proteales, Ranunculales, and basal angiosperms (in grade).

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



Rosids:
Separate petals





Asterids:
Fused petals

6

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

7

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

8

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)

9

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



10

Hamamelidaceae - witch hazel family

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



Hamamelis virginiana
Witch hazel

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

Previous year's fruit

11

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

12

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

13

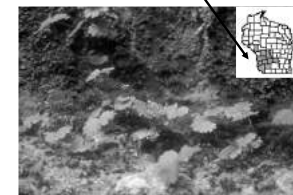
Saxifragaceae - saxifrage family



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

14

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



15

Saxifragaceae - saxifrage family



Note cup-like hypanthium

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



Mitella nuda
Small Bishop' s-cap



16

Saxifragaceae - saxifrage family



Tiarella cordifolia
Foamflower
Endangered boreal sp.



Heuchera richardsonii
prairie alumroot



17

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

18

Grossulariaceae - currant family

CA 5 CO 5 A 5 G (2)

Flowers 5 merous with sepals large and petals smaller

Gynoecium inferior of 2 fused carpels



well developed **hypanthium**

ovary



19

Grossulariaceae - currant family

Currants identified by long racemes of many flowers



Ribes americanum
American black currant



Ribes triste - swamp currant

20

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!

21

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

22

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



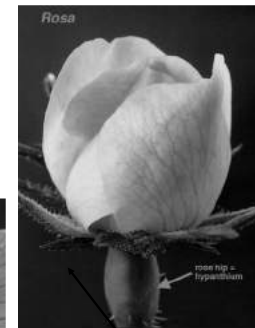
23

Rosaceae - rose family

CA 5 CO 5 A ∞ G [variable!]

Flowers are showy, 5 merous, with numerous stamens

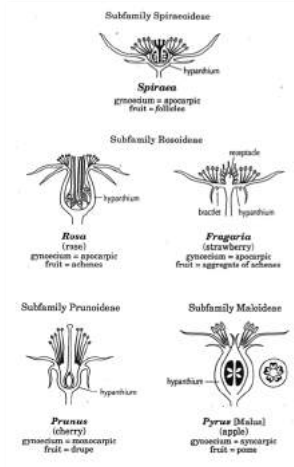
Gynoecium is variable and used to define subfamilies



Hypanthium is present to some degree in all these forms
Bracts on calyx (**epicalyx**) often present

24

Rosaceae - rose family



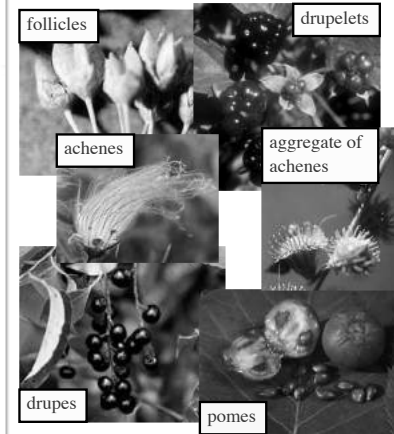
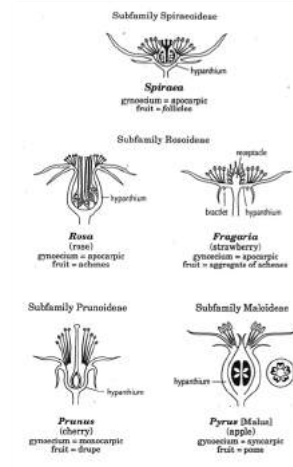
The gynoecium is variable as we will see and has been used to define 4 main groups

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:

25

Rosaceae - rose family



26

Rosaceae – spiraea & relatives



CA 5 CO 5 A ∞ G 2-8

apocarpic, superior pistils
short hypanthium
follicle fruits



Physocarpus opulifolius - ninebark



27

Rosaceae – spiraea & relatives



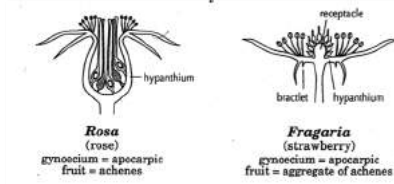
Spiraea alba - meadow-sweet



Spiraea tomentosa - hardhack

28

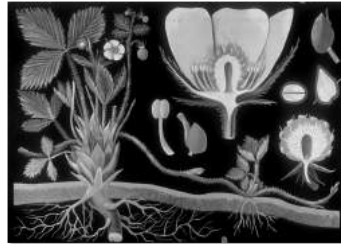
Rosaceae – rose & relatives



CA 5 CO 5 A ∞ G ∞

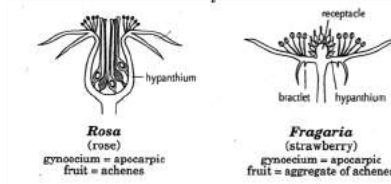
Herbs mostly with compound leaves

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



29

Rosaceae – rose & relatives



CA 5 CO 5 A ∞ G ∞

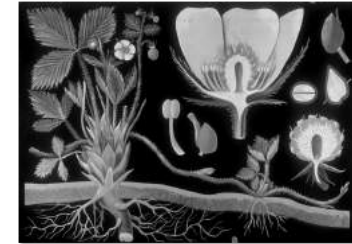
Herbs mostly with compound leaves

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

Flowers apocarpic with many carpels

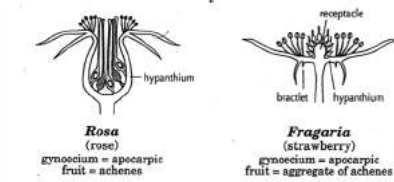
Hypanthium well-developed or **receptacle elongated**

One-seeded **achenes**



30

Rosaceae – rose & relatives



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

31

Rosaceae – rose & relatives



Fragaria virginiana - wild strawberry



Geum triflorum - prairie smoke

32

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



33

Rosaceae – rose & relatives



Potentilla anserina
[*Argentina anserina*]
silverweed

Potentilla simplex
Common cinquefoil

34

Rosaceae – rose & relatives



Rubus parviflorus
thimbleberry



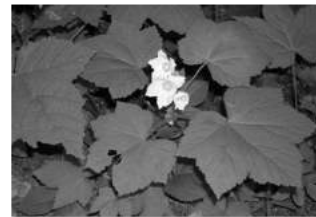
Rubus hispidus
swamp dewberry



Rubus allegheniensis
blackberry

35

Rosaceae – rose & relatives



Rubus parviflorus
thimbleberry



Great Lakes – western North American disjunct pattern

36

Rosaceae – rose & relatives



Rosa rugosa
Beach rose



Rosa palustris
Swamp rose

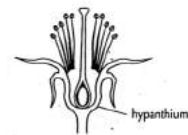


Rosa multiflora
Multiflora rose
Invasive weed

37

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



38

Rosaceae – cherry & relatives



Prunus serotina
wild black cherry



Prunus virginiana
choke cherry



39

Rosaceae – cherry & relatives



Prunus pumila - sand cherry

40

Rosaceae – cherry & relatives



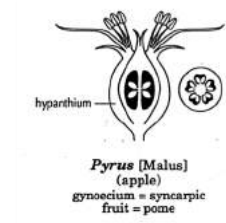
Prunus americana
Wild plum

common 401 final exam shrub!

41

Rosaceae – apple & relatives

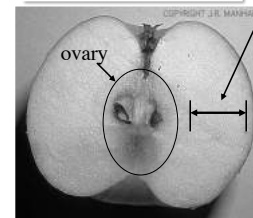
CA 5 CO 5 A ∞ \overline{G} (3-5)



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

42

Rosaceae – apple & relatives



Pyrus communis
Pear (introduced)

Aronia melanocarpa
black chokeberry



43

Rosaceae – apple & relatives

Amelanchier laevis
Serviceberry, Juneberry



common 401 final exam shrub!

44

Rosaceae – apple & relatives



Crataegus crus-galli - cockspur
hawthorn



Crataegus mollis - downy hawthorn