**Brassicaceae - mustard family**

Large, complex family of mustard oil producing species
(broccoli, brussel sprouts, cauliflower, kale, cabbage)

Cardamine concatenata - cut leaf toothwort
Wisconsin has 28 native or introduced genera - many are spring flowering
Herbs with alternate, often dissected leaves

Cardamine pratensis - cuckoo flower

- Flowers "cross-like" with 4 petals - "Cruciferae" or "cross-bearing"
- Common name is "cress"
- 6 stamens with 2 outer ones shorter

- 2 fused carpels separated by thin membrane – **septum**
- Capsule that peels off the two outer carpel walls exposing the septum attached to the persistent **replum**
**Brassicaceae - mustard family**

**Fruits are called siliques or silicles based on how the fruit is flattened relative to the septum.**

**CA 4 CO 4 A 4+2 G (2)**

Common spring flowering woodland herbs

**Cardamine concatenata - cut leaf toothwort**

**Cardamine douglasii - purple spring cress**

Common spring flowering woodland herbs

**Brassicaceae - mustard family**

**Arabidopsis lyrata - rock or sand cress (old Arabis)**

**Boechera laevigata - smooth rock cress (old Arabis)**

**Nasturtium officinale - water cress**

edible aquatic native with a mustard zing
Brassicaceae - mustard family

- Hesperis matronalis - Dame's rocket
- Barbarea vulgaris - yellow rocket, winter cress

European invasive - biennial; at a Botany 401 final exam site in Marquette County

Cleomaceae – spider plant family

Polanisia dodecandra - clammy weed

Related to the mustard family and with their own distinctive mustard oil compounds

Compound leaves common

Flowers similar to Brassicaceae but with more stamens

Trapaeolaceae - nasturtium family

Trapaeolum - garden nasturtium (with long floral spurs)

Another mustard oil family

The South American garden nasturtium commonly grown in Wisconsin as an edible salad plant
Malvaceae - mallow family

Important family that includes horticultural and economically important hibiscus, cotton, chocolate, cola, marshmallow, okra

Some severe weed pests - velvet leaf, mallows

Mainly herbaceous in Wisconsin with palmate venation, lobing, or compounding leaves

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Hibiscus

Malva

Flowers 5 merous
Stamens fused into staminal tube
Pistil of many fused carpels
Capsule fruit

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Napaea

CA 5 CO 5 A (∞) G (5-∞)

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Napaea dioica - glade mallow

Special concern species
Perhaps only Midwestern endemic genus

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Hibiscus laevis - rose mallow
Malva neglecta - mallow

Hibiscus trionum - flower of the hour

native and introduced species
Tilia americana - basswood

Once considered its own family Tiliaceae
Basswood one of the most dominant of our mesic forest species - distinctive in multiple trunks and cordate leaves with palmate venation

*Malvaceae - mallow family

*Malvaceae - mallow family

Flowers born on leaf-like bracts
∞ stamens in bundles
“linden” tree from Europe ('linn" in Sweden) basis of Carolus Linnaeus’ name

*Anacardiaceae - sumac family

*Anacardiaceae - sumac family

Woody family with alternate, compound leaves and pungent, often nasty, volatiles
Flowers are small, congested, variously unisexual or perfect. One-seeded drupes (mango, pistachio, cashew).

Rhus glabra - smooth sumac
Rhus are our 4 non-poisonous species

Rhus typhina - staghorn sumac
*Anacardiaceae - sumac family

Rhus aromatica - fragrant sumac, square bush
Special concern species

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*Anacardiaceae - sumac family

Toxicodendron radicans / rydbergii - poison ivy: variable in habit
Toxicodendron includes our 3 poisonous species

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*Anacardiaceae - sumac family

Toxicodendron vernix - poison sumac
Multi-stemmed shrub in wetlands

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**Sapindaceae - maple family

• Trees – now include old families Aceraceae and Hippocastanaceae
• Includes 2 important species of our forest - sugar maple and red maple
• Simple, palmately lobed, veined or palmately compound leaves that are opposite in arrangement

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Acer saccharum - sugar maple
Acer rubrum - red maple
**Sapindaceae - maple family**

- Unisexual flowers by abortion
- Perianth often 5 merous in our species, but petals lacking in sugar and silver maples and boxelder.
- Nectariferous disk is often present in the whorl associated with stamens

* Acer platanoides - Norway maple
  Introduced ornamental

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**Sapindaceae - maple family**

- Superior pistil composed of 2 carpels and 2 extended styles
- Note reduced and probably non-functional stamens

* Acer platanoides - Norway maple
  Introduced ornamental

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**Sapindaceae - maple family**

Fruit is a schizocarp - each carpel separates into a one seeded mericarp

* Acer platanoides - Norway maple

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**Sapindaceae - maple family**

One of the most dominant mesic forest tree species throughout Wisconsin is the sugar maple; leaves smoothed lobed; flowers without petals

* Acer saccharum/nigrum
  Sugar/black maple
**Sapindaceae - maple family**

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_Acer rubrum_ - Red maple

Another dominant hydric-xeric forest tree species throughout Wisconsin and eastern North America is the red maple; leaves serrately lobed

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_Acer saccharinum_ - Silver maple

Silver maple is characteristic of wet conditions, fast growing, and with whitish underside to leaves; like sugar maple has no petals

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_Acer negundo_ - boxelder

Only dioecious maple and only one with compound leaves

Males occupy harsher environments, females usually moister sites

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_Acer pensylvanicum_ - Striped maple, moosewood

Distinctively barked and leaved eastern boreal species only occurring in Door Co., but throughout the region north of the tension zone in Michigan
Acer pennsylvanicum
Striped maple, moosewood
A raceme of pendant flowers produce hanging samaras

Acer spicatum - mountain maple
Small maple with coarsely toothed teeth like red maple but with erect inflorescence

Aesculus glabra - Ohio buckeye
The horsechestnuts are now included in Sapindaceae along with the maples
Leaves are palmately compound and opposite
No native species in Wisconsin, but the Ohio buckeye is often planted
Outside Birge Hall is the European species, *Aesculus hippocastanum* (horse chestnut).

**Sapindaceae - maple family**

Simaroubaceae - tree-of-heaven

Tropical family of alternate, pinnately-compound leaved trees. The tree-of-heaven is originally from Asia, widely planted, and somewhat naturalized. Like most members of the family, the tree has a strong (pungent) odor.

*Simaroubaceae - tree-of-heaven*

Rutaceae - citrus family

Largely alternate, compound leaved family (except oranges and relatives) with 2 genera in Wisconsin. Family is well known for its volatile compounds that the leaves emit.

*Rutaceae - citrus family*

Ptelea trifoliata (hop tree, wafer-ash)

Long used by Native Americans as important medicinal tree.
Rutaceae - citrus family

*Zanthoxylum americanum*
Prickly-ash
Native clonal and spiny armed shrub with pinnately compound leaves; flowers reduced
Potentially invasive shrub in drier habitats

Szechuan pepper is from two Asian species of *Zanthoxylum*