What is this tree?
What is this tree?

Naming things

Wafer-ash
Stinking-ash
Hop-tree

Ptelea trifoliata

Rutaceae
– citrus family
BioDiversity - Goals

1. **Inventory earth’s biota:**
   - **Worldwide:** 1.6 million species have been described and named
   - **Wisconsin:** 32,000+ spp., and in terms of vascular plants 2,570 spp.

2. **Identify** and **name** species

3. **Classify** or place the species in groups

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantae</td>
<td>Magnoliophyta</td>
<td>Liliopsida</td>
<td>Asparagales</td>
<td>Orchidaceae</td>
<td>Cypripedium</td>
<td>Cypripedium acaule</td>
</tr>
</tbody>
</table>

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Stemless lady slipper

**Hierarchical classification**
Nomenclature - Using Names

Nomenclature = a system of naming

**Common names**

What are their advantages?

- colorful and easy to remember
- for most, only means of communication about earth’s diversity

Check out the “9 most unusual plant names”!

[google “seedorama names”]
Nomenclature - Using Names

Nomenclature = a system of naming

**Common names**

What are their advantages?

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- for most, only means of communication about earth’s diversity

What are their disadvantages?

- One plant can have many names

Stemless lady slipper
Moccasin flower
Pink lady slipper
Nomenclature - Using Names

Nomenclature = a system of naming

Common names

What are their advantages?

• colorful and easy to remember
• for most, only means of communication about earth’s diversity

What are their disadvantages?

• One plant can have many names

Garden pansy
+ 200 other names!
Nomenclature - Using Names

Nomenclature = a system of naming

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What are their disadvantages?

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• Names can be confusing or misleading

Hyphens often used with non-relationship of two terms

- Red oak (type of oak)
- Poison sumac (type of sumac)
- Poison-oak (type of sumac, not oak)
Nomenclature = a system of naming

Common names

What are their advantages?

• colorful and easy to remember
• for most, only means of communication about earth’s diversity

What are their disadvantages?

• One plant can have many names
• One name can be given to unrelated plants
• Names can be confusing or misleading
• Many plants have no common names

Carex crawfordii
?
Crawford’s sedge
Scientific names

The principles and rules of botanical nomenclature have been developed and adapted by a series of International Botanical Congresses and are listed in the International Code of Nomenclature (or plants, algae, fungi):

the major goal of nomenclature is to provide one correct name for each taxonomic group within a stable system of names

Carex crawfordii Fernald
Nomenclature - Using Names

**Scientific names**

**Species names**: binomial system which was first consistently used by Carolus Linneaus

**Genus name**: Carex

**Specific epithet**: crawfordii

**Species name**: Carex crawfordii

**Authority**: Fernald - the name of the person who came up with the name for this species

**Scientific name** is the genus + specific epithet + authority

---

*Carex crawfordii* Fernald
Scientific names - general rules

- *Italics* or *underlined* for species name
- Generic name **must always** be capitalized
- Species epithet **may always** be lower case
- Species epithet should **never** be used alone

- The first name is a singular noun and the second word is an adjective modifying the genus name. Because botanical nomenclature is Latin, the species epithet must agree in gender with the genus.

*Carex crawfordii* Fernald
Nomenclature - Using Names

Scientific names - name changes

• Unfortunately very common

• Gives rise to duplicate names - synonyms - for the same plant

• How many plant species are there vs. plant names?

• ask the British

• MANY plants you will encounter in this course have synonyms

Field Manual of Michigan Flora
Nomenclature - Using Names

Scientific names - name changes – an example

The golden ragwort was named by Linnaeus:  
*Senecio aureus* L.

Switched to the genus *Packera* by Löve & Löve:  
*Packera aurea* (L.) Löve & Löve

Note 4 things:

1. The name in parenthesis - Linnaeus - is the author of the specific epithet and the specific epithet has priority and is retained if possible when moved into a 2nd genus.

2. Löve and Löve are the authors of the binomial.

3. The gender has changed.

4. *Senecio aureus* is now a **synonym** for *Packera aurea*: check out the [Wisconsin State Herbarium](https://www.wisc.edu/museum/herbarium/) to see how it is listed.