

Plant Taxonomy





Objectives

Recognize the confusion in using common plant names.

Recognize a plant category by looking at its botanical name.

Write a botanical plant name correctly



Plant Taxonomy



Plant *Taxonomy*

“group”



Plant *Taxonomy*

“group”

~ the science of NAMING and ORGANIZING
plants into similar groups



EDIBLE



POISONOUS

EDIBLE



POISONOUS

Medicinal Properties



EDIBLE



POISONOUS

Medicinal Properties



EDIBLE



POISONOUS

Medicinal Properties



Carolus Linnaeus (1707-1778)





Classifying plants according to their **USE**
is too confusing



Classifying plants according to their **USE** is too confusing

Sage





Linnaeus:

Classify plants based on

plant morphology









Linnaeus recognized that using

LOCAL plant **NAMES**

causes confusion.



Wonder Tree



Wonder Tree

Horseradish tree

Drumstick tree

Miracle Tree

“Mother’s best friend”

Wonder Tree

Palma Christi

Castor Bean



Sunflowers





European White Water Lily
White Lotus



15 English names

44 French names

105 German names

81 Dutch names

European White Water Lily

White Lotus



Linnaeus:

Each plant will have **one name**
that **everyone uses.**



Linnaeus:

Each plant will have **one name**
that **everyone uses**.

2-word name

BINOMIAL NOMENCLATURE



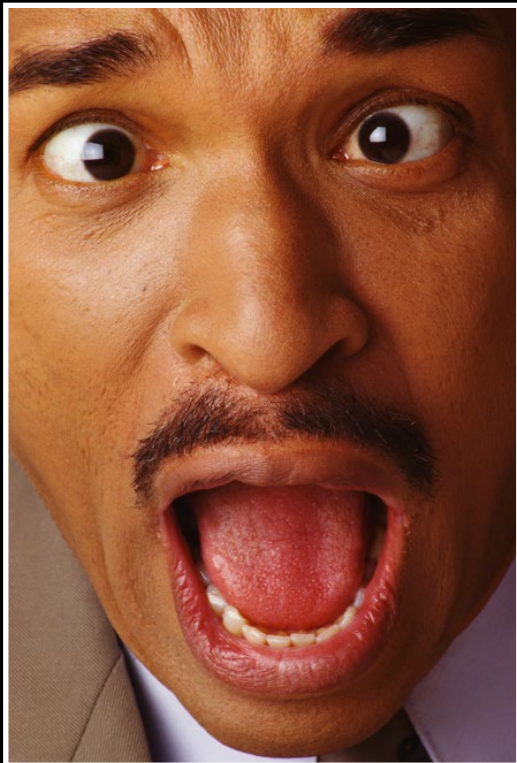
Linnaeus:

Everyone needs to use the
same language.

Latín



Why Latin?





Latin is universal

Latin is a dead language,
so it **doesn't change**

Latin is very descriptive. There
are many terms to describe
shape, color, and texture



colosso-

giganto-

titano-



-folia

colosso-

giganto-

titano-



-folia

colossofolia

gigantofolia

titanofolia

con-



conifer



Cardiospermum



```
graph TD; A[Cardiospermum] --- B[heart]; A --- C[seed]
```

heart

seed

Cardiospermum

heart

seed





Taxonomic Classifications

Kingdom

Phylum

Class

Order

Family

Genus

Species

King Philip Called Out For Good Soup



Taxonomic Classifications

Kingdom

Phylum

Class

Order

Family

Genus

Species



Taxonomic Classifications

Kingdom

Plants

Phylum

Class

Order

Family

Genus

Species



Taxonomic Classifications

Kingdom

Plants

Phylum

Class

Order

Family

Genus

Species



Plant Families



Plant Families

-aceae



Plant Families

-aceae

Rosaceae (Rose Family)

Asteraceae (Aster Family)

Fabaceae (Pea Family)



Plant Families

-aceae

Rosaceae (Rose Family)

Asteraceae (Aster Family)

Fabaceae (Pea Family)



Plant Families

-aceae

Rosaceae (Rose Family) 100 members

Asteraceae (Aster Family) 920 members

Fabaceae (Pea Family) 600 members



Plant Families

-aceae

Rosaceae (Rose Family) 100 members

Asteraceae (Aster Family) 920 members

Fabaceae (Pea Family) 600 members

Gingkoaceae 1 member

Lamiaceae (Mint Family)



square stems

**aromatic
(contain volatile oils)**

characteristic flowers



Apiaceae



**flower form
attracts
beneficial
insects**

Asteraceae



Taxonomic Classifications

Kingdom **Plant**

Phylum

Class

Order

✓ Family

Genus

Species



Taxonomic Classifications

Kingdom **Plant**

Phylum

Class

Order

Family

✓ Genus

✓ Species



Genus

(plural is genera)



Genus

(plural is genera)

Rosaceae (Rose Family) 100 members

Gingkoaceae 1 member

Genus

(plural is genera)

Rosaceae (Rose Family) 100 members

100 ***genera***

Gingkoaceae

1 member

1 ***genus***



Genus:

Viburnum

Echinacea

Rosa

Hydrangea



Genus

Hydrangea



Genus

specific epithet
(adjective)

Hydrangea



Genus

specific epithet
(adjective)

Hydrangea

macrophylla

Genus

specific epithet
(adjective)

Hydrangea

macrophylla

Hydrangea

Genus

specific epithet
(adjective)

Hydrangea

macrophylla

Hydrangea

quercifolia

Genus

specific epithet
(adjective)

Hydrangea

macrophylla

Hydrangea

quercifolia

Hydrangea

paniculata

Genus

specific epithet

Species

Hydrangea

macrophylla

Hydrangea

quercifolia

Hydrangea

paniculata

Genus

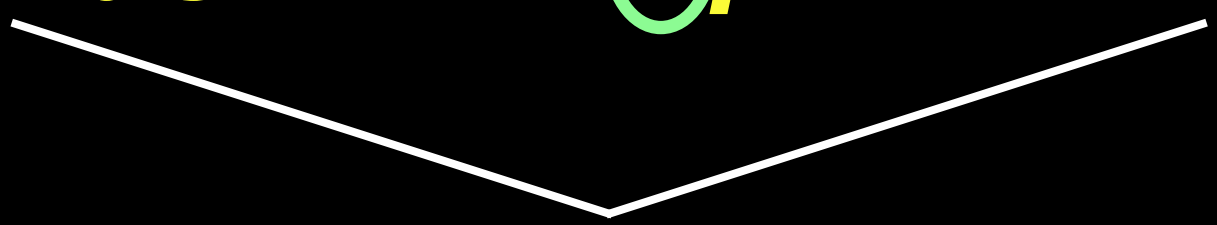
specific epithet

Species

Hydrangea macrophylla



Genus **specific epithet**



Species

Hydrangea **macrophylla**

Hemlock (*Tsuga*)



Douglas Fir
(*Pseudotsuga menziesii*)



Hemlock
(*Tsuga*)



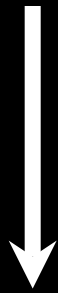


Variety

Cultivar

Both of them refer to some unique characteristic of a species

Variety



Occurs in nature

Cultivar



Man-made

Cercis canadensis
(Eastern Redbud)



Cercis canadensis
(Eastern Redbud)





Variety

~ the unique characteristic must be
inheritable and **true-to-type**

Variety

~ the unique characteristic must be
inheritable and **true-to-type**



Variety

~ the unique characteristic must be **inheritable** and **true-to-type**



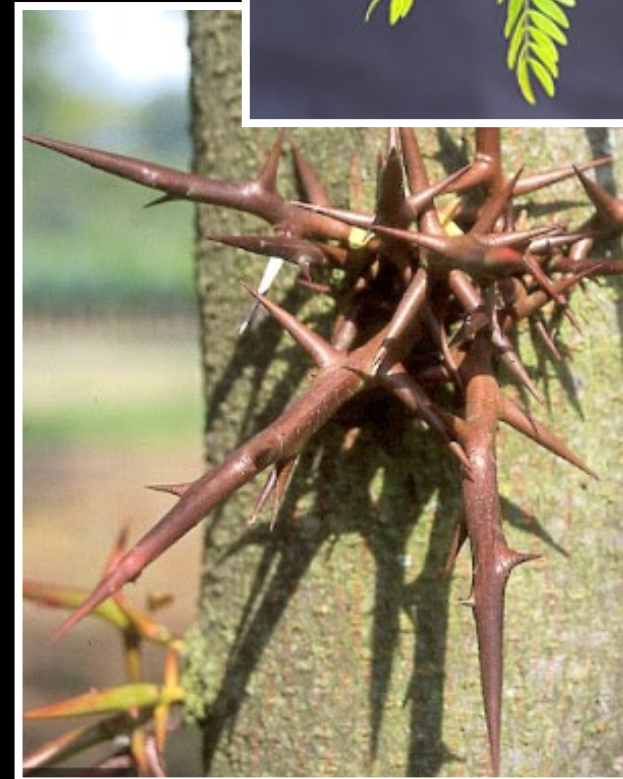
Variety

Cercis canadensis var. *alba* ↓





Gleditsia tricanthos (Common Honeylocust)



Gleditsia tricanthos



Variety

Gleditsia tricanthos var. *inermis* /
(Thornless Honeylocust)





Cultivar

Its unique characteristic is cultivated
by humans



Cultivar

Its unique characteristic is cultivated
by humans

&

When reproduced, it retains its
unique characteristic(s)

Rudbeckia hirta



Cultivar

Rudbeckia hirta 'Becky Mix'

8"-10" tall

bronze centers



Rosmarinus officinalis

(Rosemary)



Upright, erect habit

Grows 3' - 8' tall

Rosmarinus officinalis 'Prostratus'



Arching, trailing
habit

Grows to 3'

Rosmarinus officinalis 'Prostratus'



Arching, trailing
habit

Grows to 3'

Cultivar

Cultivar

Rosmarinus officinalis 'Arp'



Cold hardy



Variety

(Thornless Honeylocust)

Gleditsia tricanthos* var. *inermis





Gleditsia tricanthos var. *inermis* 'Sunburst'





Hybrid

Hybrid

A hybrid is a **cross** between 2 plants

•

A hybrid can occur in nature,
but **usually** it is “man-made”

•

A hybrid's unique characteristic is often
NOT inheritable and true-to-type



Hybrid



Plant A x Plant B = Plant C



Hamamelis mollis
(Chinese witchhazel)

Hamamelis japonica
(Japanese witchhazel)

A

B

$$A + B = C$$



Hybrid



C = *Hamamelis x intermedia*







Cercis canadensis* var. *alba

***Rosmarinus officinalis* 'Arp'**

Hamamelis x intermedia

Rudbeckia hirta

Insect Names

Unlike plants, insects have agreed upon
common names



ENTOMOLOGICAL
SOCIETY OF AMERICA
SHARING INSECT SCIENCE GLOBALLY

Common Names of Insects Database

The ESA Common Names database is an essential reference for anyone who works with insects. It includes more than 2,000 common names and is searchable by common name, scientific name, author, order, family, genus, and species.

Interested individuals may propose new common names (or changes to existing names) by submitting the Common Names Proposal Form that is reviewed by the Committee on the Common Names of Insects and voted on by the ESA Governing Board. Detailed information on the submission and approval process is available through the links in the sidebar to the left. Our understanding of taxonomy evolves over time, and although the Committee on the Common Names of Insects does work to update the taxonomic information included in the ESA Common Names database, sometimes the committee is not aware of recent changes. If you see outdated taxonomic information in the ESA Common Names list, you can help by notifying the committee at pubs@entsoc.org.



Questions?