



Biological Nomenclature

Cat Meholic

Taxonomy vs Nomenclature

- ▶ Taxonomy is the relationship between organisms
- ▶ Nomenclature refers to the rules to name organisms

- ▶ Definition of a species:
 - A group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding.
 - The species is the principal natural taxonomic unit
 - Ranks below a genus and denoted by a Latin binomial, e.g. *Homo sapiens*



Before Linnaeus

- ▶ **Polynomial**
- ▶ **Example:** '*Plantago foliis ovato-lanceolatus pubescentibus, spica cylindrica, scapo tereti*'
- ▶ After Linnaeus: *Plantago media*

Linnaean System of Classification

▶ Kingdom

▶ Phylum

▶ Class

▶ Order

▶ Family

★ **Genus**

★ **Species**

▶ **BINOMIAL NOMENCLATURE**

Binomial = Two Names

Corylopsis = **Genus**

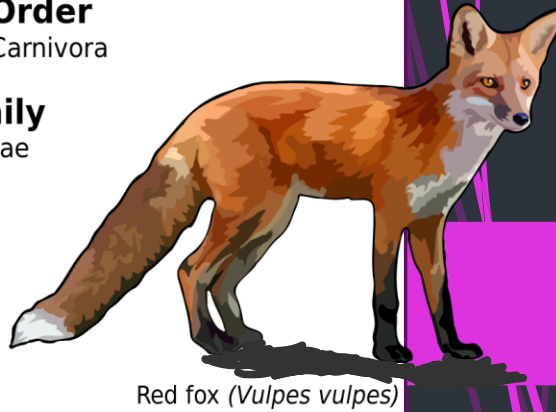
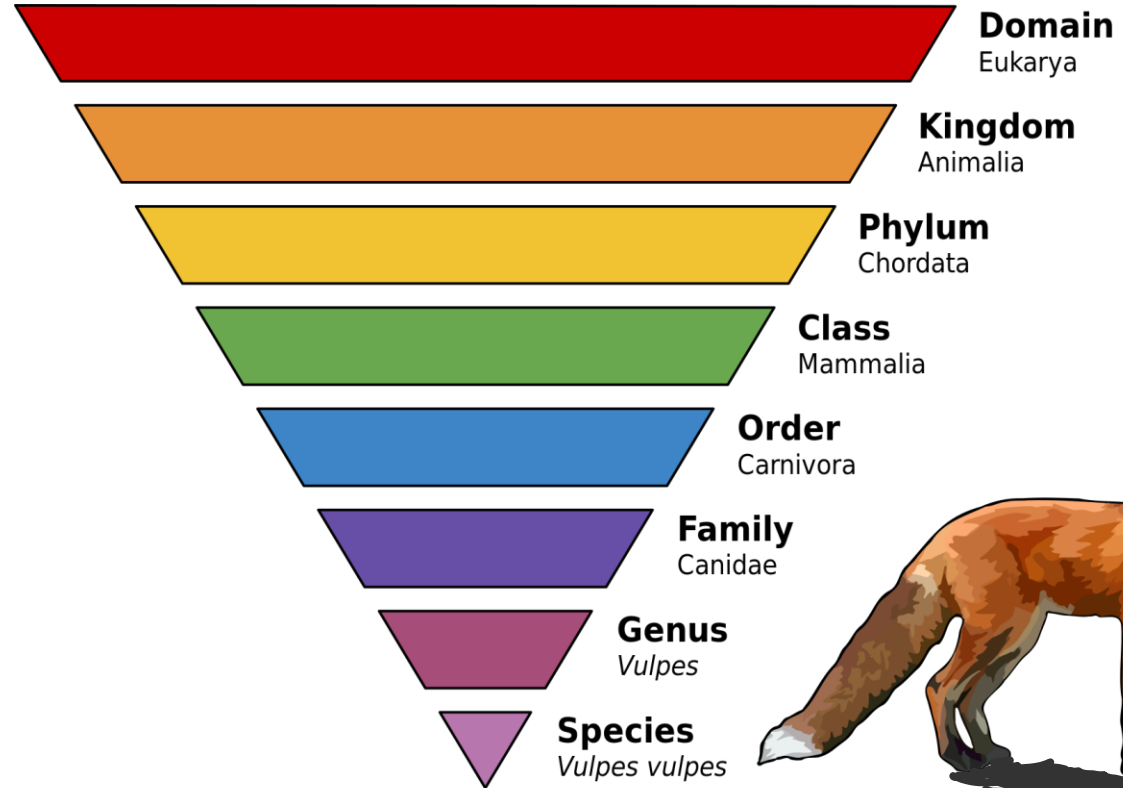
glabrescens = **Specific epithet**

Corylopsis + *glabrescens* =
SPECIES

Saying the same thing many ways...

- Species
- Species Name
- Latin Name
- Scientific Name
- Binomial





Animals vs Plants

Rules:

- ▶ Latin names should be in italics:

- ▶ *Quercus alba*

OR

- ▶ Quercus alba

NOT BOTH

- ▶ **WRONG:** *Quercus alba*

- ▶ Names that are not Latinized should not be italicized:

- ▶ *Quercus* sp.

- ▶ sp. = abbreviation for "species"

- ▶ spp. = abbreviation for the plural of "species", when many species within the same Genus are being referenced

- ▶ *Magnolia macrophylla* subsp. *ashei*

- ▶ subsp. = abbreviation for subspecies

Intraspecific Ranks:

Term	subspecies	variety	forma	subspecies	Plural of species
Abbreviation	subsp.	var.	f.	ssp.	spp.
Meaning	Rank between species and variety	Rank below species	Rank below variety, often refers to a different color	subspecies	When referring to multiple species within a genus E.g. <i>Hamamelis</i> spp.
Notes	Europe (Botany)	N. America	Out of vogue	"ssp." is not valid in Botany	



Varieties:

- ▶ *Loropetalum chinense*

- ▶ There are three varieties below the rank of *L. chinense*

- ▶ *L. chinense* var. *rubrum*

- ▶ *L. chinense* var. *coloratum*

- ▶ *L. chinense* var. *chinense*

- ▶ Descriptions of both of the first two varieties were published

- ▶ NO description published for *L. chinense* var. *chinense*

Authors:

- ▶ *Loropetalum chinense* (R. Br.) Oliv.
- ▶ *L. chinense* var. *rubrum* Yieh
- ▶ *L. chinense* var. *coloratum* C.Q. Huang

- ▶ Author Reference: [International Plant Names Index \(ipni.org\)](http://ipni.org)

- ▶ Common Abbreviations:
 - ▶ L.
 - ▶ Bartram
 - ▶ Marshall
 - ▶ Raf.

Terms:



- ▶ Common Name
- ▶ Cultivar
- ▶ Trademark Name
- ▶ Latin Name?
- ▶ Scientific Name?
- ▶ Specific Epithet?
- ▶ Species Name?
- ▶ Genus?
- ▶ Plant Patent N/A

Goji Berry 'SMNDBL' Big Lifeberry®
Lycium barbarum 'SMNDBL' Big Lifeberry®
Exposure: Sun to Partial Shade
Size: 4-6' x 4-6'
Season of Interest: Summer to Fall

Goji Berry, also known as Wolfberry, is esteemed highly nutritious fruit produced on a sprawling shrub with flexible canes and clusters of small, grey-green leaves.

The royal purple flowers appear in late spring to early summer along the length of the canes, giving rise to juicy, red fruits which grow sweeter as they mature. These fruits, which resemble small peppers, mature in early fall and can be eaten, juiced, or dried. Goji plants continue to flower and produce fruit through the first heavy frost.

Like the tomato, the Goji Berry is a member of the Solanaceae family, so eating anything but the fruit can cause an allergic reaction. In Asia the leaves, flowers, and stems are all used medicinally.



Attracts Birds

Goji Berry 'SMNDBL' Big Lifeberry®
Lycium barbarum 'SMNDBL' Big Lifeberry®
Exposure: Sun to Partial Shade

Pepperidge

BLACK GUM

Black tupelo

Blackgum

Tupelogum

T
u
p
e
l
o

**SWEET
GUM**

Common Names:

- One plant can have more than one common name
- **Not** regulated
- Good to know!

Beetlebung

S
O
U
R
G
U
M



“

Cultivars: keeping plant recorders employed since 1952.

”

-Cat Meholic (1952 was the first edition of the ICNCP)

- Cultivar: cultivated variety of a plant that displays unique characteristics and warrants a unique name
- Displayed in single quotes after the Latin Name
- Published in language of origin
- **Not** in italics, because it is not a Latin Name

Cultivars continued...

- ▶ *Viburnum nudum* 'Winterthur'
- ▶ *Coleus rehneltianus* 'Trailer Park Princess'
- ▶ *Magnolia* 'Hot Lips'
- ▶ *Salvia microphylla* 'Hot Lips'
- ▶ *Magnolia* 'Susan'





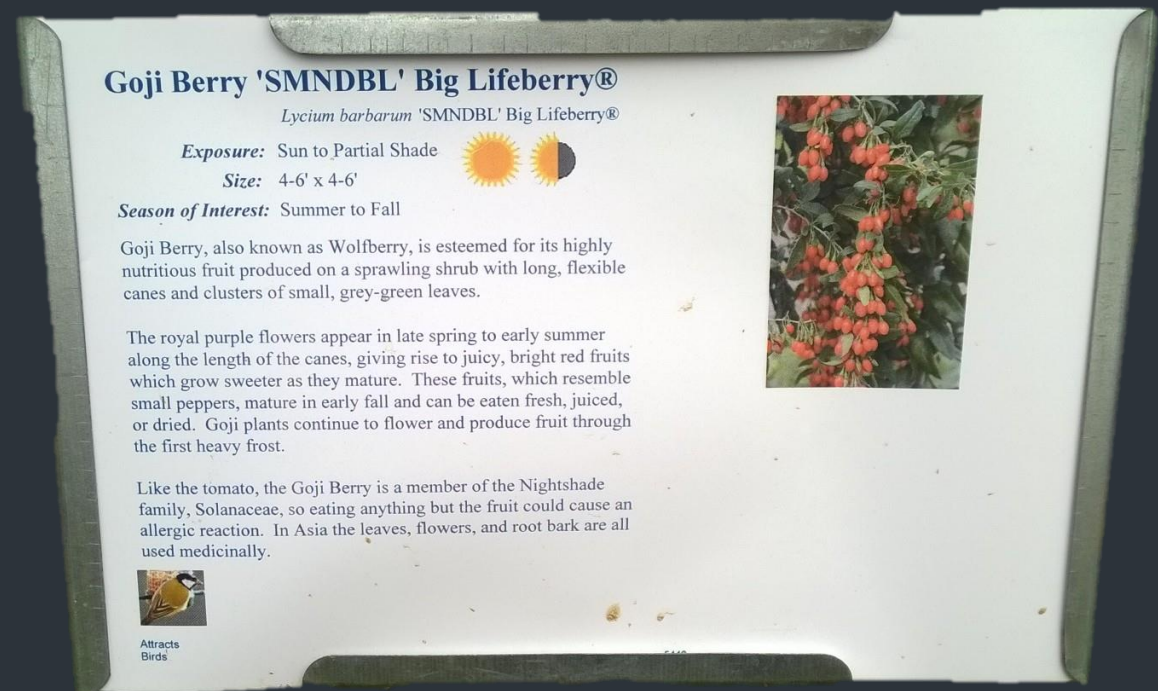
Let's get confused...

Trademark Names

- A trademark name is **INTELLECTUAL** property.
- A trademark name is a **MARKETING** tactic.
- A trademark name is **NOT** a true synonym of a cultivar name, but it is helpful to think of it like that.

Trademarks continued...

- Not put in single quotes
- Not in italics
- Not included in the Latin Name
- Needs the ™ or ® after
- What's the difference between ™ and ®?
- What's the cultivar name on this plant?
- What's the trademark name?





Confused? Good, let's get
more confused...

Plant Patents

- Patents are PROPERTY rights
- Patents are associated with a scientific name (can include cultivar name), but NOT trademark name
- Patents are a way to make money off a novel plant “invention”

Plant Patents

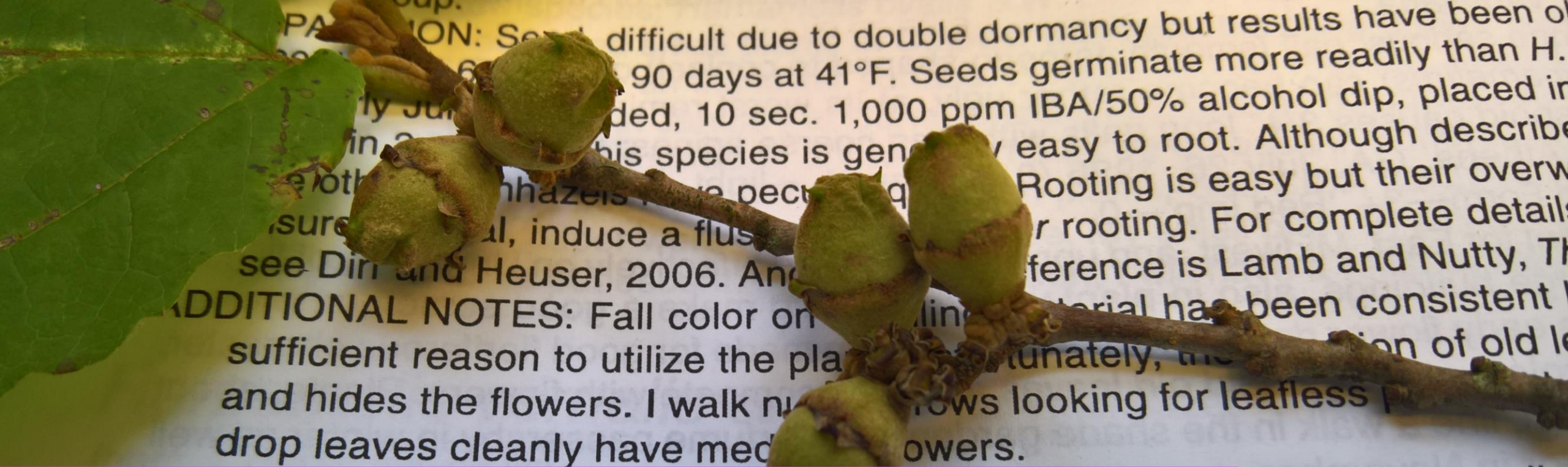
- ▶ Patents are listed as a number after a plant name:
 - ▶ PP27096 (patent number for *Caladium* 'Red Alert')
 - ▶ PPAF will be seen if the patent is submitted, but pending



Back to Science!

Hybrid Names...

- ▶ A hybrid is a cross between two or more different species, or genera
- ▶ A hybrid cross is denoted in the name by the use of a multiplication symbol: “×”, this is NOT an “x”
- ▶ This is for both naturally occurring and forced crosses
- ▶ *Gordonia* + *Franklinia* = ×*Gordlinia*
 - ▶ × is flush with the name
 - ▶ This is what is called an “inter-generic” cross
- ▶ *Viburnum carlesii* + *Viburnum bitchiuense* = *Viburnum* ×*judii*
 - ▶ This is an “inter-specific” cross
 - ▶ Note seed parent comes first



Thank you!

Hamamelis virginiana L. — Common Witchhazel

(ham-a-mē'lis vēr-jin-i-ā'na)

LEAVES: Alternate simple obovate or elliptic 3 to 6" long 2 to 3 1



Resources

- ▶ [International Code of Nomenclature for algae, fungi, and plants](#)
- ▶ [Internation Code of Nomenclature for Cultivated Plants](#)
- ▶ For researching plant patents: Google Patent Search
- ▶ [Author Reference: International Plant Names Index \(ipni.org\)](#)

- ▶ Questions or comments? Contact Cat Meholic at Cmeholic@yahoo.com