The Language of Horticulture

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The Language of Horticulture

• One Area Of Horticulture Which Intimidate Students Is The Language Of Horticulture Or Binomial Nomenclature
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“Latin is a language, as dead as dead can be. First it killed the Romans and now it’s killing me.”
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- Pronunciation is sometimes an obstacle to feeling comfortable with botanical names.
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- Remember the names are not Latin, but rather 'Latinized.' Most people pronounce Latinized words as they speak their own language: just by sounding out the syllables.
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- Theophrastus, An Ancient Greek Philosopher Started It With A List Of 450 Plants More Than 2000 Years Ago
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Naming Living Organisms

• Common vs. scientific names

• >30 million species (1.5 million named)
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Naming Living Organisms

• Common vs. scientific names
• *Plantago major*: broad-leaved plantain
  - 45 other English names
  - 11 French names
  - 75 Dutch names
  - 106 German names
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1st Latin Names

• *Nepeta floribus interrupte spicatis pedunculatis* = catnip
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1st Latin Names

*Dianthus floribus solitariis, squamis calycinis subovatis brevissimis, corollis, crenatis* = carnation
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• In 1753 Carl Linnaeus (born Carl von Linne) a Swedish naturalist developed his system of classification.
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Binomial Nomenclature System

Carolus Linnaeus (1750’s)

• Two-part Latin scientific name
  - Genus species
  - Nepeta cataria = catnip

• Phylogenetic system
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Binomial Nomenclature System

• International Code of Botanical Nomenclature (ICBN)

• http://www.bgbm.fu-berlin.de/iapt/nomenclature/code/SaintLouis/0000St.Luistitle.htm
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• ITIS is the Integrated Taxonomic Information System. It has authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world

• http://www.itis.usda.gov/
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Binomial System

• **Genus species**
  - *Genus* = Noun, *Capitalized*
  - *species* = adjective, *lower case*
    • both are either *italicized* or *underlined*
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*Genus* = Common Name

- Euonymus
- Petunia
- Rhododendron
- Forsythia
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Species Name = Adjective

- *Betula lutea* = yellow birch
- *Betula alba* = white birch
- *Quercus rubra* = red oak
- *Juglans nigra* = black walnut
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Species Name = Geography

- *Anemone virginiana* = Virginia anemone
- *Taxus canadensis* = Canadian yew
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Authority

- *Prunus persica* (L.) Batsch
- Taxonomist: scientist who identifies and classifies living organisms
- International Code of Botanical Nomenclature
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Cultivars and Varieties

• **Variety**: botanical term; species with stable mutations passed on to progeny; underline or italicize
• **Cultivar**: species with mutations caused by human intervention; *cv.* or *Gleditsia triacanthos* var. *inermis* ‘Skyline’ (common name: thornless honeylocust)
Clones and Lines

• **Clone** - plants derived asexually from 1 individual
• **Line** - sexually reproduced cultivar
  - inbred - self-pollinate
  - hybrid - cross of 2 inbred lines
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• Locating The Specific Plant You Want Depends On Understanding And Adhering To A Few Simple Rules
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- If You Decide That You Want A Maple And Ask A Nursery Employee, What Would You Expect In Return?
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Maple Is A Common Name For Many Different Species In One Genus
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• More Specific Information Is Needed And This Is Where Binomial Nomenclature, Also Called The Botanical Or Scientific Name, Is Needed
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• The Typical Horticultural Name That Is Given To A Plant Has Four Parts: The Two-Name Binomial With Author Designation, Plus A Cultivar Name: Acer rubrum L. 'Autumn Flame'
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Acer

• Genus. The Genus Designates A Group Of Closely Related Plant With Enough In Common To Be Distinguished From Other Groups. A Genus May Include One Or More Species
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rubrum

- Specific Epithet. The Specific Epithet Is Often A Descriptive Word: *Alba* (White), *Brevis* (Short), *Sativa* (Cultivated), Etc
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- *Acer rubrum* (Genus + Specific Epithet)
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Species

The Genus And Specific Epithet Compose The Species Name Which Is Underlined Or Italicized
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• By Definition A Species Is A Distinct Succession Of Interbreeding Individuals From Generation To Generation
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• When Two Different Species Cross, The Result Is An Interspecific Hybrid Designated: *Dianthus X Allwoodii* (*Dianthus caryophyllus* + *Dianthus plumarius*)
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- Less Common Is The Intergeneric Cross, For Example, X Heucherella tirelloides (Heuchera sanguinea X Tiarella cordifolia)
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- L. Stands For Linnaeus Who First Named This Tree
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• The Author Designation Is A Single Letter Or An Abbreviation That Indicates The Originator Of The Name. It Is Often Omitted In Horticultural Catalogs
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- 'Autumn Flame' Is The Cultivar Name
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• The Term Cultivar Was Coined By Liberty Hyde Bailey In The First Part Of The Century From 'Cultivated Variety'
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- The Definition Is 'An Assemblage Of Cultivated Plants Which Is Clearly Distinguishable By Any Characters (Morphological, Physiological, Cytological, Chemical, Or Other) And Which, When Reproduced Sexually Or Asexually Retains Its Distinguishing Characters.' (International Code Of Nomenclature For Cultivated Plants, 1980)
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• A Cultivar May Be Propagated Sexually Or Asexually
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- Cultivars Can Be Produced From Seed And Therefore May Exhibit Some Variation In Traits Other Than That For Which The Selection Was Made
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• For Example, *Lavandula angustifolia* 'Munstead Dwarf' Is A Lavender Selected For Its Dwarf Habit
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- Even if seed grown, all plants so named should not exceed 18 inches in height, but may show slight variation in flower or foliage color, habit, etc.
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- In Order For All Munstead Cultivars To Be Identical, Or Clones, They Would Have To Be Propagated Asexually From Cuttings
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• Many Gardeners Do Not Realize That 'Cultivar' Is Not Synonymous With 'Clone'
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- When perusing catalogs another feature of naming plants becomes apparent.
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- This Is The Use Of The Trademark (Designated ©)
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• A Trademark Is Legally Defined As A Word(S) Or Symbol Which Identifies The Place Of Origin Of A Product. Conard-Pyle's Star Trademark Is A Good Example
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• The Consumer Recognizes That Roses With The Star Designation Are From Conard-Pyle And Can Make Assumptions With This Information
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- Confusion Arises When A Company Uses A Trademark Name As A Cultivar Name
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• For Example, A Particular Holly Is Often Designated In The Trade As *Ilex X 'China Girl'*
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• If You Were To Find *Ilex X 'Mesog'* Would You Expect To Know This Holly? Probably Not
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- In Fact, The Cultivar Name For This Holly Is 'Mesog' And The Trademark Is China Girl
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- This Naming Practice Violates Both Trademark Specifications And Nomenclature Rules, But It Is Becoming Increasingly Common
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• The Reason Is Profit: If a breeder patents a new plant, he restricts others from propagating it without paying royalties.
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- The Patent Is In Effect For 17 Years. A Trademark May Be Renewed Indefinitely
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- When The Patent Expires, Anyone May Propagate The Plant, But They Must Call It 'Mesog' Which Does Not Have Any Commercial Recognition Factor
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- The Name China Girl Is Still The Property Of The Original Producer
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- Sometimes The Names Of Plants Change
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- For Example, The Chrysanthemum Genus Was Recently Split Into Eight Different Genera, Including *Dendranthema, Tanacetum, And Leucanthemum*
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• Name Changes Usually Indicate Reclassification, Often As A Result Of Advances In Molecular Biology
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• It May Take Gardening Literature And Nursery And Seed Catalogs Years To Reflect Such Changes And In The Meantime You May Note Many Inconsistencies In The Names Of Plants.
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- Adherence To The Simple Rules Of Binomial Nomenclature Produces Greater Consistency And Reliability In The Nursery, Floriculture, And Landscape Industries
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• Insuring That Plants Are Named Correctly Obviously Benefits Both The Producer And The Consumer
The End

Come Back Next Week