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PLANT IDENTIFICATION

Why identify plants?

- curiosity
- ability to write and talk about plant
- ability to look up information about plant
- learn cultural requirements
- learn propagation methods
- learn common pest problems
- is it edible, medicinal, poisonous?

Reasons not to use common names

- Well known plants often have more than one common name
- not universal
- two or more plants may have the same common name
- many species, particularly rare ones, do not have common names

Nymphaea alba European White Waterlily

- 15 English names
- 44 French names
- 105 German names
- 81 Dutch names
- 245 total common names

Prior to Linnaeus, plants were named using descriptive terms:

The scientific name for carnation was

Dianthus floribus solitariis squamis calycinis subovatis brevissimis corollis crenatus

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Botanical Nomenclature

- the systematic naming of plants
- developed by Carl Von Linne or Linnaeus in the 1700's and still used today
- plants names are derived primarily from Latin and Greek descriptive terms or are named in honor of the discoverer of the plant or by the discoverer in honor of someone else.

Linnaeus developed a system with categories (taxa) that were increasingly more specific:

Kingdom
Division (Phylum)
Class
Order
Family
Genus
Species

Divisions in the Plant Kingdom

- Bryophytes Mosses
- Pteridophytes Ferns
- Magnoliophytes Flowering plants
- Pinophytes Conifers
- ++

Botanical Latin

• Plants	Plantae
• Flowering plants	Magnoliophyta
• Dicotyledons	Magnoliopsida
• Group of families	Rosales
• Currant family	Grossulariaceae
• Currant	*Ribes*
• Red flowering currant	*Ribes sanguineum*

Plant Classification

- Plant classification is the process of categorizing plants into groups with similar characteristics
- Nearly all classifications are based on the sexual parts of the fruit and the flowers.
- So far, there are over 1 million botanically different plants in existence named by the binomial system of nomenclature.

- Kingdom
- Division
- Class
- Order
- Family
- Genus
- Species

} Gardeners use these 3

Family

- A group of plants with similar characteristics, especially flowers, fruits, and seeds. The reproductive structures are used for distinction.
- The size of a family varies from 1 to 100+ genera.

  e.g. Ginkgoaceae has one genus and one species, *Ginkgo biloba*
  Rosaceae has 100 genera *(Malus, Spiraea, Rosa,* etc.)

The names of plants

The Latin binomial for a plant consists of two words:

1. Genus or generic name
2. specific epithet

} species

both names should always be underlined or in italics
the genus is capitalized, the specific epithet is not

Genus (plural genera)

- An assemblage of species having many structural similarities in common and closely related by descent from a common ancestor
- First word in a botanical name

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Scientific Names

- scientific names should always be underlined or in italics
- the genus is capitalized, the specific epithet is not
- the name is only complete if it is followed by the name of the person who first described or named it, the authority
  e.g. *Spiraea douglasii* Hook

Plant species can be divided more specifically into:

- Variety
- Cultivar

Variety

- naturally occurring subset of species
- a plant which retains most of the characteristics of the species but differs in some identifiable, consistent way, i.e. flower color, plant size
- Added to binomial, preceded by var.
- *Pinus contorta* var. *contorta* Shore Pine
- *Pinus contorta* var. *latifolia* Lodgepole Pine

Cultivar

- "cultivated variety"
- horticulturally developed and maintained
- distinguished by characters which are retained when reproduced

written in plain text, capitalized and set off by single quotes
Viburnum opulus 'Roseum'

Integrated Approach to Plant Identification

- Visual inspection of plant characteristics
- Photographic references
- Plant classification keys
- Expert advice

5 no own head

The genus can serve to describe one of the following:

- a plant's appearance-*Hemerocallis* (day and beauty)
- supposed medicinal qualities- *Pulmonaria* (lungwort)
- resemblance to something else-*Hepatica* (liver)
- honor a person by using their name – *Kalmia* (Peter Kalm)

Specific epithet

- second word in the botanical name
- often an adjective used to describe size, color, leaf shape, growth habit, origin of the plant or to commemorate a person

The specific epithet can give us hints ~~plant~~ about the plant:

- Cotoneaster horizontalis
- Coreopsis gigantea
- Clerodendrum thomsoniae
- Godetia grandiflora
- Cistus x purpureus
- Chionanthus virginicus

Species

- Genus + specific epithet
- basic taxonomic unit
- group of organisms that have similar characteristics whose offspring have the ability to interbreed

Hybrids

Closely related but separate species interbreed
Hybrids are often sterile

- If a plant is a hybrid
- of two species, an x
- appears between the
- genus and specific
- epithet

Cornus x *rutgersensis*
(hybrid of C. florida and C. kousa)

- If a plant is a hybrid
- of two genera, an x
- appears before the genus

xHeucherella
(hybrid of *Heuchera* and *Tiarella)*

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Integrated Approach to Plant Identification

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Which part of the plant is used for classification?

Plant Classification

Nearly all classifications are based on the sexual parts of the fruit and the flower.


Collect information about what you see:



Herbaceous, conifer, broadleaved evergreen, deciduous?

Collect information about what you see:

where does it grow?

Collect information about what you see:

What is the overall form of the plant?