

Scientific Names Information

1. Why are scientific names needed?
 - a. *Scholars, tradesmen and merchants needed consistent way to identify plants.*
 - b. *Some previous methods resulted in long descriptions in no consistent order.*
 - c. *Different plants could have the same name, e.g. "bluebells" or "daisy."*
 - d. *A single plant could have multiple names, depending on where or when it was named.*
 - e. *Knowing the scientific name helps select the right plant, for example, an *alta* (tall) plant won't fit in a *nana* (small or dwarf) space.*

2. Taxonomy, the classification of plants and animal organisms.
 - a. *In the 18th century, Carl Linnaeus, a Swedish biologist, published "Species Plantarum."*
 - b. *He developed a system where plants were arranged in groups sharing similar characteristics.*
 - c. *Classification of plants follows the same kind of hierarchical system as for animals: kingdom, division (or "phylum" for animals), class, order, family, genus, species.*
 - d. *As gardeners, we are concerned with the last three, and often only with the last two.*
 - i. *Family: A broad group of plants with common characteristics. The name of the family usually ends in "aceae." For example, the name of the family that includes pines, spruces, and cedars is "Pinaceae." These all have needlelike leaves.*
 - ii. *Genus: A group of plants within a family with even more distinctive characteristics. For example, "Pinus" is the scientific name, or genus, for what we call Pines. These all have their needles in small bundles and their cone scales overlap.*
 - iii. *Species: Plants within a genus that are capable of interbreeding freely. For example, within the genus "Pinus" there is Sugar Pine (*Pinus lambertiana*) which has needles in groups of five and cylindrical cones, and Ponderosa Pine (*Pinus ponderosa*) which has needles in groups of three and oval cones, and many more.*
 - e. *Notice that the name of a species consists of the name of a genus followed by a "specific epithet." An epithet is a descriptor or adjective.*
 - i. *This system is called binomial nomenclature. Binomial means two names.*
 - ii. *The name of the genus is written with a capital initial letter (e.g. *Pinus*.)*
 - iii. *The specific epithet is written without capitals (e.g. *ponderosa*.)*
 - iv. *In print, the genus and specific epithet are italicized. If handwritten, they are underlined.*
 - f. *Sometimes there will be variations between different populations of the same species, e.g. some may have green leaves and others have grayish leaves. If this occurs naturally it is called a "variety." If a result of plant breeding, it is a "cultivar" (i.e. "cultivated variety"), but often the terms are used interchangeably.*
 - i. *The name of the cultivar or variety is written after the name of the species.*
 - ii. *The name of a cultivar is capitalized and within single quotation marks, but not italicized (e.g. *Rosa rugosa* 'Frau Dagmar Hartopp'.)*
 - iii. *The name of a variety is italicized and written after the abbreviation "var."*
 - g. *Species names are usually from the Latin language.*
 - i. *It was the language of science because it was no longer spoken and therefore it was not subject to change over the years.*

- ii. *Botanists and plant fanciers from different countries could use the same terminology.*
- iii. *Other sources: classical Greek (e.g. rhodos=rose; dendron=tree) and other languages; names of notable people (e.g. Lewisia and Clarkia are named for explorers Lewis and Clark); places (e.g. chinensis, japonica, canadensis).*
- iv. *The first to discover or hybridize gets naming rights.*
- h. *Most specific epithets describe the plant in some way.*
 - i. *Color (rubra=red; alba=white)*
 - ii. *Shape or size (nana=small, dwarf)*
 - iii. *Origin or habitat (borealis=northern; hispanicus=of Spain)*
 - iv. *Other features (gracilis=slender, graceful; rugosa=wrinkled, rough)*
 - v. *Similarity to other plants: with suffix –oides (aceroides=leaves like maple trees)*
- i. *With the use of DNA, botanists sometimes reclassify plants. For example, according to its DNA, maples belong in the soapberry family (Sapindaceae) instead of in their former family (Aceraceae).*

3. Pronunciation is a problem since we don't speak Latin. Where to place the accent? Long or short vowel? (It's KLEM-a-tis, not kla-MAT-is—but you won't convince some of that.)
- a. *We all mispronounce plant names on occasion. Cimicifuga racemosa? Agastache rupestris?*
 - b. *Don't be a pronunciation snob. Resist the impulse to correct others. (They could be right.)*
 - c. *Some mispronunciations are so universally accepted they become the norm. (Example: Ageratum.)*
 - d. *It's best to look the pronunciation up, before the incorrect one becomes habit.*
 - e. *There are various ways to find the correct pronunciation.*
 - i. *Google and Yahoo*
 - ii. *Reference books such as Sunset Western Garden Book or The Dictionary of Plant Names*
 - iii. *Commercial apps*