

## Nomenclature, Names, and Pronunciation<sup>©</sup>

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### NOMENCLATURE

The botanical naming of plants was established by Carolus Linnaeus around 1745, a Swedish scientist who invented a binomial system, published in his *Species Plantarum*, for the naming and classification of all organisms. This system was intended to cover animals, bacteria, and insects, as well as plants, but over time Linnaeus has become most closely associated with the plant kingdom. Linnaeus did not work alone in the classification of species but is credited with establishing the basis of today's botanical nomenclature. Prior to the Linnaeus system, some botanical names had up to 10 words and were complicated, in effect mini descriptions of that plant. The system Linnaeus established has now been in use for over 250 years and to date, nothing better has arisen to replace it. The success of the system can be attributed in part to its simplicity and use of few conventions. A binomial system comprises two main parts, and for plant naming this is the genus and species. The genus can be seen as the family name and the species the first name as in the examples below:

Genus:	<i>Malus</i>	<i>Cordyline</i>	<i>Camellia</i>
Species:	<i>domestica</i>	<i>australis</i>	<i>sinensis</i>

When the genus and species are written in full, additional letters at the end are often included. These letters at the end are known as the authority, the person or persons who named and identified the species for the first time. A common example is L. for Linnaeus., e.g., *Malus domestica* L., the common apple. The authority can consist of more than one letter or letter set indicating that the species was jointly named or at some point reclassified. For reclassification the first letter set is in brackets. An example is *Hebe elliptica* (Forst. f.) Pennell, where Forster first named the species, then later it was reclassified by Pennell.

The system has continued to develop and adapt over the centuries and a plant may be classified into more than just two parts, with greater naming detail than just genus and species. A full classification comprises a hierarchy of groups with common base characters:

Kingdom  
 Division  
 Class  
 Subclass  
 Family  
 Subfamily  
 Tribe  
 Genus  
 Subgenus  
 Section  
 Subsection  
 Species  
 Subspecies  
 Botanical Variety  
 Form  
 Cultivar

This multi level classification can be applied to all species, but is most commonly applied to very large genera such as *Rhododendron*, *Eucalyptus*, or *Brassica*. The additional classification is not a departure from the Linnaeus binomial system but a refinement, with the original principle forming the basis of the classification.

During the 18th Century, the time of Linnaeus, Latin was the language of scholarship and science. In addition, Latin provided the possibility for Europeans or any others speaking different languages to communicate more effectively, encouraging cross language botanical understanding. For this reason it is not surprising that botanical nomenclature and the Linnaeus system is Latin based. To this day, Latin remains the international botanical language. The plant names we use today are still mostly Latin based, but there have been other language influences, the most significant being Greek.

The use of the system continues with active botanical classification and reclassification continuing throughout the world. Reclassification of well known genera or species to horticulture and agriculture can cause confusion and irritation and some reclassifications are never really accepted by plant users. One example where plant users did not accept a reclassification and even opposed it was that of the florists' chrysanthemum, *Chrysanthemum ×morifolium* Ramat. Plant users in the cut flower and pot plant industries considered it created too many problems. This species was moved from *Chrysanthemum* to the new genus *Dendranthema*, and eventually returned back to *Chrysanthemum*.

Other horticultural and agricultural examples include:

- 1) The species comprising the genus *Michelia* have now been moved into *Magnolia*. This change is still under debate by *Magnolia* botanists and experts.
- 2) The species comprising *Dipladenia* have now been moved into *Mandevilla*.
- 3) Some *Helichrysum* species now comprise the new genus *Bracteantha*.
- 4) The tomato, formerly *Lycopersicon esculentum*, is now *Solanum lycopersicon*.
- 5) The species *Myrtus ugni* has been reclassified as *Ugni molinae*.

Reclassification is carried out to correct errors and rectify mistakes, recognise new information such as molecular data, and to ensure that all classifications and names closely follow botanical naming conventions. These conventions are internationally drafted and agreed to under a formal system that governs all plant classification and naming, the International Code of Botanical Nomenclature (ICBN).

## NAMES

All plant names follow Latin grammatical rules with a noun (the genus), an adjective (the species), and the corresponding gender. The name can often be a mini description such as:

- *Leucodendron*; leuco, without colour, and dendron, tree like. The original plant of the genus was first discovered as a silvery tree-like shrub.
- *Rhododendron*; rhodo, red or rose like, and dendron, tree like.
- *Leptospermum*; lepto, slender or thin, and spermum, seed. The genus with thin seeds.

An example of the use of simple descriptive terms to name the species is *Coprosma repens* A. Rich. The use of *repens* identifies this plant as a prostrate or low growing *Coprosma*. *Repens* or *reptans* are Latin for creeping or trailing.

The name may also tell us who first discovered the plant, where it was discovered, and perhaps something of that period of history. Many genera and species refer to historical figures, to commemorate someone or honour persons of significance to the plant discoverer. Some examples are *australis*, often used as a species to indicate the Southern Hemisphere or the southern version of a Northern species already known, such as *Nothofagus antarctica* (G. Forst.) Oerst discovered in Southern Chile with proximity to Antarctica and *Dahlia* Cav. named to commemorate Dahl, a Swedish botanist who worked with Linnaeus.

An understanding of Latin can not only assist overall knowledge of botanical nomenclature but in some cases provide a literal translation of a plant name. Wheat and bean have botanical names *Triticum* and *Phaseolus*, respectively, which are Latin for wheat and bean. Plant names provide information about that plant which are often not obvious but on closer examination reveal something of the character of the plant and of the discovery; who, where, and the period of history.

The formal botanical name provides international consistency where the use of common names is not consistent and generally unreliable, dependent on language, and usage. In some cases the same common name refers to a certain plant in one place or country and that same name could mean an entirely different plant somewhere else. Common names can also be misleading, for example there are many plants known as lilies but not all would be botanically classified as belonging to the lily family.

## PRONUNCIATION

Latin itself is not entirely in agreement regarding its own pronunciation and variation exists caused by the influence of the native language of the speaker. In general botanical names are pronounced as they would be according to the conventions of the native language spoken. Broadly speaking Latin itself lacks emphasis or stress on the syllables. Taking into consideration how English speakers pronounce Latin and

the broad principle of not stressing syllables, the following are some examples of two commonly heard pronunciations. The first one would be the author's preference:

Pittos-porum	vs.	Pit-tosporum
Clematis	vs.	Clem-ate-is
Dahlia (Daylea)	vs.	Darhlea
Clivia (Cliveia)	vs.	Cliv-ia
Gerbera (soft g)	vs.	Gerbera (hard g)

### CONCLUSION

Botanical nomenclature and the naming of plants have a long and fascinating history which does include rules and conventions. The day to day pronunciation of plant names has fewer rules, having a much greater level of interpretation by the speaker. The speaker's pronunciation of Latin-based plant names will be significantly influenced by the language usually spoken. A pronunciation of a plant name may be acceptable in one region or country but may not be in another place.

### ADDITIONAL READING

- Contributors.** 2003. *Flora: The gardener's bible*, pp 46-51. Bateman, Auckland.
- Stearn, W.T.** 2002. *Stearn's dictionary of plant names for gardeners*. Timber Press, Portland, Oregon.