

# Alter-Natives Wholesale Nursery, Waipu, NZ

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## INFO Sheet - Botanical Names Explained

It's a complex world out there and the botanists don't seem to make it any easier! And there is nothing more confusing than listening to a bunch of gardeners talk in streams of apparently meaningless gobbledy-gook. Who do they think they are?

But hold on a minute, don't put it down to garden snobbery. Botanical names give us clues about plants, their relatives, their cultural needs and they are well worth learning.

### Botanical, Latin or Scientific Names?

All plants have a unique name and this is often called the scientific name, botanical or the 'Latin name' as many are based on Latin. Many botanical names are derived from Greek, a persons name (the discoverer, sponsor or someone-else altogether!), are descriptive or give the place of origin of the plant. For this reason we prefer to use the term 'botanical name' rather than 'Latin name'.

The system we use today is based on that developed by Linneaus, a Swedish naturalist, developed in the 18th century. Botanical names all have two main parts: a generic or family name and a specific or species name. Thus, the human world we have the Brown family, and we have John, Jane and Mary Brown within that. In the plant world we have the celmisia family, *Celmisia*, and its member *Celmisia semicordata*, *Celmisia spectabilis*, etc.

### Plants have names, just like people

The difference between the human naming convention and that of plants is that each pant generic or family name occurs only once. Specific names may occur a number of times (e.g. *reptans* or *alba*) but, coupled with the generic name, each plant has a unique name. Think of all the New Zealand plants that are *Something haastii* or *Something chathamical*!

### Why Not Common Names?

Many gardeners and most plant nurseries prefer botanical names as they avoid the confusion that common names can cause. Common names can be very local, some plants don't have a common name, and others have more than one.

More than one plant has the same common name; in the UK an 'Ash' is actually a *Fraxinus* while in the USA it is really a *Sorbus*; 'Arums' are frequently not *Arums* at all *Zantedischia*; and an Aconite can be the late summer flowering, deep blue flowered perennial *Aconitum* or the tiny winter flowering bulb *Eranthis hyemalis*. In NZ a 'Mingimingi' can be either *Coprosma propinqua*, *Cyathodes juniperina* or *Cyathodes robusta* which also comes with either a white fruit or a red fruit.

And then there are the plants that have more than one common name; the climbing pest *Clematis vitalba* is known as Old Man's Beard and Traveller's Joy; Bergamont and Bee's Balm are both *Monarda didyma*; and *Erythronium* as Trout Lilies and Dogs Tooth Violets.

### Parts of Botanical Names

The way the name is built up is based on Latin grammar rules. Each plant family name (eg. 'Cordylone') is a noun and has a gender (i.e. is male or female). Species within each family are adjectives ('australis', 'indivisa', etc.).

Botanical names are usually written in italics as in *Cordylone indivisa*.

Sometimes, perhaps too often for gardeners' liking, the scientists will change a botanical name and thus we get *Brachyglottis monroi* (syn. *Senecio monroi*) where the name in brackets is the previous or, occasionally, less well-known name. This is also known as the 'synonym'.

The great value in understanding the botanical name comes from following the family trees

through and using the other, descriptive clues in the name. *Celmisia spectabilis* is a very showy or spectacular celmisia, *Coprosma prostrata* and *Cotoneaster horizontalis* are prostrate growers, and *Cercis chinensis* comes from China and *Cercis canadensis* from Canada; *Geum montanum* comes from the mountains; *Prunus autumnalis* flowers in the autumn.

So while sometimes it does seem as if 'It's all Greek to me!', it really is worth finding out the botanical name.

Using the botanical rather than a common name is not garden snobbery. It is simple good sense, and it saves the confusion common names can cause, unless it is as unpronounceable as *Paeonia mlokosewitschii*, named for Frederick Mlokosewitch who found it, but known almost universally as 'Molly the Witch'.

## The Structure of Plant Families

### Plant Orders

A step up from the botanical name we have plant orders. These are larger families of plants.

A **plant order** is a family of different genera that are sufficiently similar, e.g. *Magnoliaceae* or *Ranunculaceae* are plant orders that contain many different genera that share a key characteristic(s).

The plant order is not included in the botanical name, except in scientific situations or in gardening textbooks and plant dictionaries where it gives us clues that clematis, ranunculus and hellebores, all members of *Ranunculaceae*, have something in common.

### Genera

The **genera** or genus a plant family such as the New Zealand family of pohutukawa and rata trees is *Metrosideros*, and within this genus we find *Metrosideros excelsa*, *Metrosideros umbellata*, *Metrosideros robusta*, etc

### Species

A **species** is those plants that are the same and produce viable offspring. Plants within a species can vary in small ways, such as differences leaf colouration resulting from environment, climate and soil. And, so, within species you can have subspecies, varieties, cultivars and hybrids.

### Variety

Differences in climate, soils, and aspect can cause these differences to be sufficiently distinct that botanists will distinguish between different **varieties** (often shown as 'var.') within a species. *Clianthus puniceus* var. *maximus* differs from the so-called 'typical' form *Clianthus puniceus*.

### Subspecies

When there is no overlap in the geographical distribution of the plants, the variety may be called a **subspecies** (often shown as 'ssp.', as in *Crocus biflorus* ssp. *creweii*). These are still able to produce offspring when two subspecies within the same plant species are brought together.

### Cultivars

Sometimes gardeners may select a particular plant because of leaf colour form or flower. This selection is still genetically identical to these within the species and must be propagated vegetatively (cuttings, division etc) to continue the desired attribute, as seed grown progeny may not 'come true', that is, they may not carry the particular attribute sought.

These plants are called **cultivars** and the cultivar name is shown in inverted commas, e.g. *Astelia chathamica* 'Silver Spear'

### Hybrids

Where different species within a family or different families produce offspring, the new plants are called **hybrids**. Hellebores are very promiscuous in this way. Apart from physically separating parent plants or hand pollinating it is all too easy to end up with hybrids rather than the species plants you may covet.

These plants are shown as a 'cross' such as *Corokia x virgata* 'Bronze King', where *virgata* is not a species but a hybrid between two of the Hamamelis species. *Camellia x williamsii* 'Donation' is a hybrid where *Camellia williamsii* is known to be a parent. Hybrids can also be 'intersectional hybrids', that is, they occur between different genera as in *x Cupressocyparis*, a cross between *Chamaecyparis* and *Cupressus*.

### Some Botanical Terms Explained

The descriptive clues in botanical names are rewarding if you translate or understand the terms themselves.

Some names relate to flower colour, others to habit, and others to origin.

Some of the most common terms are listed here, as well as some specially New Zealand botanical terms.

#### A

- **alba** white
- **albicans** becoming white
- **albiflorus** white flower
- **alpina** alpine
- **angustifolius** narrow leaved
- **apetala** has no petals
- **arachnoides** spider or spider webs e.g. *Sempervivium arachnoideum*, the house leek has spider web like appearance
- **arboreus or aborescens** tree like appearance
- **arenaria** of sand, referring to plants from sandy places
- **argentea or argyrea** silver or silvery
- **atro** dark coloured as in 'atropurpureum'
- **attenuata** narrows to a point
- **aurantica** orange
- **aurea or aureus** gold or golden
- **australis** southern
- **azurea** azure or sky blue

#### B

- **banksii** named for Sir Joseph Banks, botanist on Captain Cook's voyages
- **bellidioides** daisy-like appearance, referring to bellis, the daisy
- **bicolour** two coloured
- **bidwillii** named for John Bidwill, early New Zealand alpine plant enthusiast
- **Brachyglottis** short tongued, referring to the short ray florets
- **buchananii** named for John Buchanan, early New Zealand botanist

#### C

- **caerulea** dark blue
- **caerulecens** bluish, blue tinged
- **campanulatus** bell shaped
- **canadensis** of Canada or North-eastern America
- **canina** of dogs, usually means inferior plant (the Romans were not dog-lovers!)
- **cardinalis** scarlet, cardinal red
- **carnea** deep pink
- **cataria** of cats, eg *Nepeta cataria*, catmint
- **carractae** of waterfalls

- **chathamicus/chathamica** of the Chatham Islands
- **chinensis** of China
- **chlorantha** green flowered
- **cinerea** ash colour, greyish
- **coccineum** scarlet
- **columnaris** columnar
- **colensoi** named for William Colenso, early botanist
- **confertiflora** flowers that are crowded together
- **cordata** heart shaped
- **crassifolius/crassifolia/crassifolium** with thick leaves
- **cuninghamii** named for Allan Cunningham, early botanist

## D

- **decora** beautiful
- **delayavi** for Abbe Jean Marie Delavay missionary and collector
- **dieffenbachii** for Dr Ernst Dieffenbach, naturalist
- **discolor** two different colours
- **dissecta** deeply cut, usually of a leaf
- **domestica** cultivated
- **davidii** for Pere Arman David, missionary plant collector
- **Dracanena** female dragon

## E

- **Echinops** a hedgehog, spiky
- **Echium** vipers ( a snake)
- **Erodium** heron's bill, referring to the shape of the seedpods
- **excelsa/excelsum/excelsus** tall
- **eximia** exceptional

## F

- **fibrosa** fibrous
- **flava** clear yellow
- **florida** flowering
- **-florus** of flowers
- **foetidus** smelling, stinking
- **-folius** of leaves
- **forestii** for George Forest, Scottish plant collector
- **fragrans/fragrantissima** fragrant
- **frutcosa** shrubby
- **fulvida** tawny coloured

## H

- **haastii** for Julius von Haast, explorer
- **hastata** spear shaped
- **hookeri** for Sir William or Sir Joseph Hooker, directors of Royal Botanic Gardens Kew
- **hortensia** of gardens
- **horizontalis** flat, horizontal
- **humilis** low growing

## G

- **Geranium** crane's bill, referring to the shape of the seedpods
- **gracilis** graceful
- **graminea** grass-like

## I

- **ilicifolia** holly-like (from *Ilex* or Holly)
- **incana** grey
- **indica** of India
- **insignis** notable
- **-issima** very (as in 'bellissima')
- **isophylla** equal sized leaves
- **ixioides** ixia like

## J

- **japonica** of Japan
- **jucundum** attractive example

## K

- **kirkii** for Thomas Kirk, botanist

## L

- **laetus/laetum** milky
- **latifolius/latifolia** broad leaved
- **lessonii/lessoniana** for Pierre Lesson surgeon and botanist
- **lineata** striped, with lines
- **lucida/lucens** shining, bright
- **lutea** yellow
- **lutescens** becoming yellow
- **lyallii** for David Lyall, surgeon

## M

- **macrantha** having large flowers
- **marcocarpa** having large fruit
- **marcophylla** having large leaves
- **meleagris** spotted like a guinea fowl as in *Fritillaria meleagris*
- **melissa** honey bee
- **microphylla** very small leaved
- **monroi** for Sir David Monro, plant collector
- **montana/montanum** of the mountains
- **moschatum** musky scented
- **myosotis** mouse's ear

## N

- **nigra** black
- **novae-zelandiae** of New Zealand

## O

- **officinalis** sold as a herb
- **orientalis** eastern

## P

- **paniculata** having flowers in panicles
- **Pelargonium** stork's bill, referring to the shape of the seedpods
- **petriei** for Donald Petrie, plant collector
- **praecox** early, of flowering
- **procumbens** prostrate
- **procurrens** spreading
- **prolifera** prolific or free flowering
- **prostrata** prostrate or lying on the ground
- **pumila/pumilo** dwarf
- **purpurea** purple (*Echinea purpurea*)

- **purpurascens** purplish, tinged purple

## R

- **Ranunculus** frog, because both like marshy, boggy ground
- **recta** upright
- **reflexa** bent backwards
- **reptans or repens** creeping
- **richardii** for Achille Richard, French botanist
- **rigens/rigida** rigid or stiff habit
- **roseum** rose colour
- **rotundata** rounded
- **rotundifolia** having round-shaped leaves
- **rubra/rubrum** red
- **rugosa/rugosum** wrinkled
- **rupestris** growing in rocks

## S

- **salicina/salicifolia** willow like
- **sanguinea** blood red
- **scandens** climbing
- **serotina** late flowering or late ripening
- **serpens** creeping
- **spicata** in spikes
- **stans/stricta** erect or upright
- **supine** supine or prostrate

## T

- **trigida** spotted like a tiger

## U

- **umbellatus** flowers appearing to be in umbels
- **ursinum** a bear, referring to shaggy appearance

## V

- **vernus** of spring
- **viridis/virens** green
- **viridifolius** green leaved
- **versicolor** multi coloured
- **vulgaris** common

## Z

- **Zebrina** zebra, referring to the stripes

## Botanical Terms - New Zealand Plant Names



New Zealand plants are special. Many are unique to our island country and found nowhere else in the world.

The descriptive clues in botanical names are rewarding if you translate or understand the terms themselves. The names of our plants reflect their discoverers, place of origin and our history.

## A

- **Aciphylla** the Spaniard for the sharp, needle leaves
- **Agathis** the kauri, from agathis 'ball of thread' for the distinctive cones

- **Arthropodium** the rengarenga lily, from 'arthro' a joint and 'podion' stalk (has jointed pedicels)
- **Astelia** stem-less
- **australis** southern, as in *Cordyline australis*

## B

- **banksii** named for Sir Joseph Banks, botanist on Captain Cook's voyages
- **bidwillii** named for John Bidwill, early New Zealand alpine plant enthusiast
- **buchananii** named for John Buchanan, early New Zealand botanist

## C

- **Celmisia** mountain daisies, after Celmisios in Greek mythology
- **chathamicus/chathamica** of the Chatham Islands
- **Clianthus** kaka beak, from 'kleos' glory and 'anthos' flower for the distinctive flowers
- **colensoi** named for William Colenso, early botanist
- **Coprosma** smelling of manure
- **Cordyline** the cabbage tree, meaning a club as the large and fleshy roots resemble
- **Corokia** from the Maori name 'Korokio'
- **cuninghamii** named for Allan Cunningham, early botanist

## D

- **Dicksonia** the tree fern, for James Dickson a Scottish nurseryman and naturalist
- **dieffenbachii** for Dr Ernst Dieffenbach, naturalist
- **Dracophyllum** the grass trees, from 'draco' dragon and 'phyllum' leaf

## G

- **Griselinia** the broadleaf, for Franseco Grisellini, naturalist

## H

- **haastii** for Julius von Haast, explorer
- **Hebe** for the Greek Goddess of youth 'Hebe'
- **Hoheria** for the Moari name 'Houhere'
- **hookeri** for Sir William or Sir Joseph Hooker, directors of Royal Botanic Gardens Kew

## K

- **kirkii** for Thomas Kirk, early botanist

## L

- **Leptospermum** the manuka, 'leptos' or slender and 'sperma' or seed for the narrow seeds
- **lessonii/lessoniana** for Pierre Lesson, surgeon and botanist
- **lyallii** for David Lyall, surgeon

## M

- **Metrosideros** the rata and pohutukawa for their very hard wood; 'metra' heartwood and 'sideros' iron hard
- **monroi** for Sir David Monro, plant collector
- **Muehlenbeckia** after Muehlenbeck, a French physician and botanist
- **Myosotidium** the Chatham Island Forget-me-not, for *Myosotis* the European forget-me-not

## N

- **Nothofagus** native beech, from 'nothos' false and 'fagus' the beech
- **novae-zelandiae** meaning 'of New Zealand'

## O

- **Olearia** because it resembles an olive tree (*Olea*)

#### **P**

- **Pachystegia** the Marlborough Rock Daisy, from 'pakys' or thick for the thick leaves
- **Phormium** New Zealand flax, from 'phormoin' or a mat, a reference to the traditional Maori weaving of flax and flax fibres
- **Pittosporum** for the sticky seeds, as 'pitta' means pitch or tar and 'sporum' seeds
- **Plagianthus** 'plagios' oblique and 'anthos' flower for the asymmetrical flowers
- **Podocarpus** the totara, from 'podos' foot and 'karpos' fruit for the stalked fruit
- **Pseudopanax** lancewoods and the five-finger, from 'pseudo' false and 'panax' a related genus

#### **R**

- **richardii** for Achille Richard, French botanist

#### **S**

- **sinclairii** Andrew Sinclair an early plant collector
- **solandri** Daniel Solander botanist on the Cook voyages
- **Sophora** the kowhai, from 'sophera' the Arabic name for a tree with pea shaped flowers

#### **T**

- **traversii** William Travers early plant collector, lawyer and politician

#### **W**

- **williamsii** for William Williams, Bishop of Waiapu in the nineteenth century

#### **X**

- **Xeronema** Poor Knights Lily, from 'xeros' dry