



GUIDE TO PLANT NAMES

PLANT NAMES can be the cause of a lot of confusion and even aggravation for gardeners. The following notes, outlining how names are given and the different forms they take, are designed to de-mystify the subject and give a clear explanation of why plant names appear in the ways they do in RHS publications.

COMMON NAMES VS BOTANICAL NAMES

Common Names

The most common question asked by gardeners is "Why can't we just use common names?". While, on the face of it, this is an attractive proposition, there are several factors which make this impractical for garden plants. The main hurdle is that plants are introduced from all over the world and therefore do not have common names in the language of the recipient country. Although common names could be introduced along with the plant, in whatever language, experience teaches us that acceptance of such names is likely to be resisted, and the possible need to transliterate the names from non-Roman scripts, such as Japanese or Hebrew, is a further complication. Additionally, there will often be more than one name available, and there is no system to decide which one to use. Many plants attract a plethora of common names of very local usage, even within a small country and, of course, widespread plants have common names in many languages. Also, at the opposite extreme, there will be plants which do not have a common name in any language if they have never been found to be useful to people.

It would naturally be possible to invent common names in suitable languages for recipient countries. In fact, this is already done extensively in the United States, but with no system to regulate or standardise names, confusion can easily arise through "common" names having no regard for the relationships

between plants. For example, fragrant Himalayan champaca, banana shrub and Jack Fogg michelia are common names listed in a recent catalogue for *Michelia champaca*, *Michelia figo* and *Michelia* × *foggii* 'Jack Fogg' respectively. These are three closely related plants whose botanical names identify them precisely *and* reveal their relatedness. With no other point of reference, the common names chosen are forced to draw upon unrelated elements of the botanical names and can end up as more complex constructions without conveying as much information. The "common" names do not show that these are similar plants yet do not avoid "difficult" botanical elements. An added problem is that, in books organised in alphabetical order as most plant-based gardening books are, if only common names were used, many closely-related plants could not be grouped under a single heading but would be spread throughout the book.

On a slightly different but related tack, familiar and well-loved common names tend to get used for more than one plant. A classic example in the English-speaking world is bluebell, referring to *Hyacinthoides non-scripta* in England, *Campanula rotundifolia* in Scotland, *Sollya heterophylla* in Australia and species of *Mertensia* in North America. The scope for confusion is enormous.

Botanical Names

Interestingly, most people do not think twice about using rhododendron, chrysanthemum or fuchsia as the common names for three large and popular groups of plants, but these are also their botanical names. The fact that they have passed into common usage neatly demonstrates the great strength of botanical names – they are intended to be universal. The aim of the botanical naming system is to provide each different plant with a single

name which can be recognised by anyone, whatever their own language.

Botanical names are often referred to as Latin names, but this is slightly misleading. While it is true that the rules governing the formation and spelling of names are based on Latin, any word, in any language, can form the basis of a plant name. Thus many plant names commemorate people and places or are derived from common names used in the country of origin. These are indiscriminately mixed with Latin and Greek words, all of them "latinized" by following the rules of Latin grammar.

WHAT BOTANICAL NAMES REPRESENT

To understand how botanical names are applied, it is necessary briefly to describe how plants are classified, since the units into which they are separated determine the structure of names.

Species

The basic unit of plant classification is the **species** (not *specie* – species is both singular and plural in biology) which can be defined as a group of interbreeding individuals producing more-or-less similar offspring and differing from other similar groups by a number of key characters.

Genera

Species which share a number of significant features are grouped together to form a **genus** (plural **genera**). The characteristics of a genus are often quite easy to recognise, making this perhaps the most generally useful level at which plants can be identified for practical purposes. It is common for a plant to be referred to as, for instance, *Malva* sp., the **sp.** being an abbreviation of species and indicating an unidentified species of a particular genus. Genera can vary in size from a single species to over a thousand, depending on their distinctive characteristics.

Families

Genera are grouped into larger entities called **families**, some of which are easily recognised, others less so. Although families may appear at first to be of only academic interest, knowledge of the family to which an unknown plant belongs is the springboard to identifying it, and for the gardener, it can give an

indication of the conditions required for successful cultivation.

The majority of families have always had names ending with the same group of letters, *-aceae*, and based on a genus within the family. This neatly distinguishes family names from genera and other plant groups. However, there are eight families with very well-known names which do not conform to this pattern. While it is perfectly acceptable to continue to use these names, the modern trend is to use alternative names with *-aceae* endings and this is what has been adopted in RHS publications. The families are *Compositae* (*Asteraceae*), *Cruciferae* (*Brassicaceae*), *Gramineae* (*Poaceae*), *Guttiferae* (*Clusiaceae*), *Labiatae* (*Lamiaceae*), *Leguminosae* (split into three families based on well-known sub-families: *Caesalpiniaceae*, *Mimosaceae* and *Papilionaceae*), *Palmae* (*Arecaceae*) and *Umbelliferae* (*Apiaceae*). In addition, the traditionally large family *Liliaceae* is split into a number of smaller, more natural families which may be unfamiliar to many people.

HOW NAMES WORK

- *at higher levels: genus, species and family*

The name of a species is made up of two elements and is known as a **binomen** or **binominal name**, often referred to in common parlance as a **binomial**. First comes the name of the genus, for example, *Malva*. Added to this is the **specific epithet**, for example, *moschata*. Put together, they form the name of a species, *Malva moschata*, which is in the family *Malvaceae*. To make them stand out in text, plant names are printed in *italics* (or underlined in handwriting) and the genus and family start with capital letters. Each species in a genus is given a different specific epithet, for example, *Malva verticillata* and *M. sylvestris* (abbreviation of a genus name to a single letter, once established in a piece of text, is perfectly acceptable). While genus names are uniquely associated with related plants, specific epithets can each be used once in as many genera as botanists decide appropriate. Repetition of an epithet within a genus would naturally cause confusion and is not allowed.

- *and at lower levels: subspecies, variety and form*

So far, so straightforward. Things start to get complicated when variation *within* species

needs recognition by use of further names. When plants have a wide distribution in the wild, natural selection and evolution work at different rates in different areas, especially if populations become geographically isolated. Such populations are often distinguished as **subspecies** (abbreviated to **subsp.** or occasionally *ssp.* but this can easily be confused with *spp.*, the abbreviation for species plural, so is not recommended), easily attributable to the species but differing in significant characters. Thus *Malva sylvestris* subsp. *mauritanica* differs from the typical subsp. *sylvestris* in having a more robust habit and larger, deeper purple flowers with darker veins.

Populations and individuals which exhibit less striking differences are named as varieties and forms (technically **varietas** and **forma**, abbreviated to **var.** and **f.** respectively). So *Malva alcea* var. *fastigiata* differs from typical plants in having an upright habit (although other characters may vary too) and *M. moschata* f. *alba* simply has white rather than mauve flowers. Botanically, these are not very significant differences, but in the garden they can be crucial to achieving the desired effect.

Although subspecies, varietas and forma tend to be used somewhat erratically and interchangeably, they are technically ranked in order of difference and one plant can have a name at each rank – for example, the diminutive daffodil *Narcissus romieuxii* subsp. *albidus* var. *zaianicus* f. *lutescens*. As can be seen, there are five ranked elements to this name which, when fully presented, gives a very precise idea to the daffodil enthusiast as to the characters of the plant in question. Mercifully, this situation is rare! Such complex names are rarely used and indeed are not really essential from a naming point of view – the trinomen *N. romieuxii* f. *lutescens* provides a perfectly precise name for the plant. Where cultivars are derived from such a plant, it is not generally necessary to cite every rank but sufficient to add the cultivar name to the species (or even just the genus).

Sometimes, a second epithet is quoted without indication of rank, an invalid construction known as an **unranked trinomen** or **trinomial**. In these cases, either the rank is not known or it is unclear whether or not the name should be treated as a cultivar. This is an unsatisfactory situation but requires considerable research to resolve.

Hybrids

Some plant species, when grown together, either in the wild or in gardens, are found to interbreed. The resulting offspring are known as **hybrids** and the majority occur between species within a single genus. For example, hybrids between *Erica ciliaris* and *E. tetralix* have been given the hybrid name *Erica × watsonii*, the multiplication sign denoting hybrid origin. Some hybrids have not been given a hybrid name but are referred to by quoting the parent species linked by a multiplication sign, for instance *Drosera nitidula* × *D. pulchella*. This is termed a **hybrid formula**. Hybrids between different genera are given a new hybrid genus name and the different combinations of species are treated as species in their own right. Thus the hybrid *Mahonia aquifolium* × *Berberis sargentiana* has been named ×*Mahoberberis aquisargentii* and *M. aquifolium* × *B. julianae* is ×*Mahoberberis meithkeana*.

There are also a few special-case hybrids called graft hybrids, where the tissues of two plants are physically rather than genetically mixed. These are indicated by an addition rather than a multiplication sign, so *Laburnum* + *Cytisus* becomes +*Laburnocytisus*.

Cultivars

In cultivation, variation within species and that generated by hybridisation is particularly valued. Plants exhibiting desirable characteristics of flower colour, habit, size, variegation, fruit colour, flavour, etc. are often given names. These are termed **cultivar** names (from cultivated variety) and can be added to a binomial or simply a generic name. To make them stand out from the purely botanical part of a name, they are enclosed in single quotation marks and are not written in italics, resulting in names like *Malva sylvestris* 'Primley Blue' and +*Laburnocytisus* 'Adamii'. Additionally, new cultivar names coined since 1959 should follow international rules and be in a modern language – i.e.: they should not be Latin or latinized, as many were in the past – to make them stand out even more clearly. As with specific epithets, cultivar names should not be repeated within a genus, although it is easy to find historical examples where this has occurred.

Cultivars are often popularly referred to as varieties, which is fine if they have names like 'Mavoureen Nesmith' or 'Techny Spider', but could be confused with a botanical varietas if

they are older, latinized names. Consistent use of the term cultivar is therefore helpful in promoting clarity when using plant names.

Group, Grex and Series

When dealing with some genera where there are a lot of cultivars or where a well-known cultivar becomes variable through poor selection of propagation material or gives rise to a lot of new ones through breeding work, it has been found useful to use a collective name, the **cultivar-group name**, to identify them. Such a name always includes the word Group and, when used in conjunction with a cultivar name, is enclosed in round brackets (never single quotation marks). For example, *Actaea simplex* (Atropurpurea Group) 'Brunette' is a distinct cultivar within a group of purple-leaved cultivars. It is also possible to recognise as a cultivar-group a species, subspecies or varietas no longer felt by botanists to be worthy of recognition as a separate entity when the whole range of variation in related plants is considered. Such a species becomes part of another species, and botanically its name becomes a synonym. However, its characteristics are often horticulturally significant and the transfer of its name to a cultivar-group is useful to gardeners. For example, while *Rhododendron scintillans* is no longer recognised as a separate species and is botanically "sunk" into *R. polycladum*, it is recognised horticulturally as *R. polycladum* Scintillans Group.

In some plant groups, notably within orchids, where complex hybrid parentages are carefully recorded, the group system is further refined. Each hybrid is given a **grex** name (Latin for flock) which covers all offspring from that particular cross, however different they may be from one another. Individual cultivars may then be named and propagated by division or micropropagation. Although a grex is similar to a botanical hybrid in principal, backcrossing a member of a grex with one of its parents results in a new grex, with a new name, whereas backcrossing a hybrid makes no difference to the hybrid name. In contrast to groups, with grex names no brackets are used and grex can be abbreviated to **gx** – for example, *Pleione* Shantung gx is a popular grex of hardy ground-living orchids while *P. Shantung* gx 'Muriel Harberd' is a particularly good cultivar, selected from the grex.

With seed-raised plants, particularly F₁ hybrid flowers, **series** have become increasingly popular. A series is like a group in that it

contains a number of similar cultivars, but it differs in being created specifically as a marketing device, with cultivars added to create a range of flower colours on plants of similar habit. The identities of individual cultivars are often undisclosed, and the individual colour elements may be represented by slightly different cultivars over the years. Series names are treated similarly to group names. Unfortunately, the term series also has a precise botanical usage, but one that is unlikely to affect gardeners.

Synonyms

Although the ideal is for each species or cultivar to have only one name, anyone dealing with plants soon comes across a situation where one plant has received two or more names, or two plants have received the same name. In each case, only one name and application, for reasons of precision and stability, can be regarded as correct. Additional names are known as **synonyms**, constant thorns in the sides of gardeners! Two major factors leading to name changes and the creation of synonyms are rarely understood and require some explanation. Firstly, in the past and during the nineteenth century in particular, when a huge amount of botanical exploration was taking place, it was possible for botanists to be beavering away describing and naming plants in different parts of the world, blissfully unaware that they were duplicating someone else's work. This is perhaps difficult to understand in these days of instant global communication, but it led to many cases of a single species with two or more names or two or more species with the same name. The simplest way to resolve the problem of duplicated and superfluous names is to invoke a rule of **priority** – the earliest name correctly published wins and new names are therefore needed for some plants with later, incorrect names. This is a basically sound idea but has led to changes of some very familiar, yet incorrect names due to the discovery of earlier, correct ones in very obscure texts. This can have a destabilising effect, contrary to the intention of the rule of priority, so there is now a much more pragmatic view being taken, with some of the more destabilising proposed name changes vetted by an international panel and often rejected if the technically wrong name is widely known. For example, the popular heather, *Erica carnea* was saved in this way

from being changed to *E. herbacea*. An even more dramatic example was the retention of the genus name *Freesia* which was retained for use instead of the technically correct *Anomatheca*.

Cultivars acquire extra names in similar ways to wild plants and also through deliberate re-naming when the original name is felt not to promote good sales. The same principle of priority applies for cultivars as for wild plants so there are always cases where correction is needed. However, it is not always appropriate to provide a new, unique name for a cultivar which has been given the same name as an existing plant. Where there are large groups of cultivars, such as in the genera *Fuchsia* and *Pelargonium*, repetition of cultivar names has proved difficult to avoid. In these cases, names can be qualified with the name of the raiser, the date of introduction or the plant type to help pinpoint their identity.

The second factor leading to name changes is misidentification. In gardens, many plants get distributed with the wrong name, usually through simple error, and it is important that these mistakes are corrected so that the plant you buy agrees with the description that goes with the name.

In the case of wild plants, correct identification and naming relies on knowing what species exist and how they are related. Many people will be surprised to learn that we have by no means discovered every plant species on the planet, and every discovery sheds new light on plant relationships. Add to this the increasingly reliable evidence of evolutionary trends provided by DNA and molecular studies and the fact that, for better or worse, the naming system aims to reflect the classification and therefore relationships, and it can be seen that some changes are inevitable. The most obvious results of new knowledge are changes to the membership of genera, some being split, with new ones created, others amalgamated – “lumped” or “sunk” in botanical slang. However, the closer we get to cataloguing the whole plant kingdom, the fewer new changes should occur.

Authorities

In the light of the problems raised by the existence of synonyms, and in order that plant names can be used with precision within the scientific world, there is a system whereby the name of the person who coined the name of a

plant species (its **author** or **authority**) is added to the plant name, often in abbreviated form. For instance, *Malva moschata* L. was named by the prolific botanist Linnaeus, whose own name is abbreviated by international convention to L.. Most of the time, this information is irrelevant to the gardener, except in cases where the same name has been given to two different plants. Although only one usage is correct, both may be encountered in books and catalogues, so indicating the author is the only way to be certain about which plant is being referred to. The same can happen with cultivars and, although authors are not routinely attached to cultivar names, use of this device is sometimes the only way to be certain which plant, with the desired characteristics, you are dealing with.

Trade Designations and Trade Marks

Until fairly recently, cultivars, grexes and groups were the end of the story with regard to garden plant names. However, the expanding use of Plant Breeders' Rights (PBR) has resulted in an increasing number of additional names known as **trade designations**, and the marketing of plants using trade marks has also added confusion.

To obtain PBR protection, a new plant must be registered and pass tests for distinctness, uniformity and stability under an approved name. The approved name is its cultivar name, which should be unique to that plant within the genus and must, by law, be used on labels at point-of-sale. However, it has become common practice for the names registered for PBR to be code or nonsense names which do nothing to promote healthy sales. An additional selling name is therefore given (or perhaps several, covering different countries in which the plant is sold) and this is the **trade designation**. It looks like a cultivar name and is often presented as such, but should not be enclosed in single quotation marks and should be printed in a contrasting typeface to the cultivar name. Rose growers started the trend for code names, but with the rapid expansion of PBR they can now be found attached to almost any plant. *Choisya ternata* Sundance is a good example of a common garden centre plant with both a trade designation and a coded cultivar name, *C. ternata* 'Lich'.

There is a second category of trade designation, involving cultivar names

originating in foreign languages. In many countries there is resistance to using foreign cultivar names which can easily be translated or given an alternative name. For the sake of stability, the correct form of a cultivar name is taken, with certain provisos, as that in which it was originally published, in a nursery catalogue or elsewhere. Translations are therefore classified as trade designations. In RHS publications, trade designations are always printed in a different typeface and the cultivar name (where known) is always quoted alongside, either in brackets or linked by an equals sign. For example, *Ceratostigma willmottianum* Forest Blue = 'Lice' or *C. willmottianum* Desert Skies ('Palmgold'). Trade marks used in conjunction with, or apparently as cultivar names cause particular problems when assessing which words constitute a cultivar name and which are a marketing device. It seems that trade mark law is regularly misinterpreted when it comes to plants, since a trade mark is a device to identify goods from a particular source and cannot be used to identify a particular plant. However, the way names are presented on labels and in catalogues often leaves this as the only possible interpretation. Care is therefore needed when quoting trade marks alongside plant names. They are best treated as trade designations, i.e. printed in a different typeface but with the appropriate TM or ® suffix.

...AND BACK TO COMMON NAMES

Having begun with a section on common names and why they are not the best way to communicate information about plants, let's end with one celebrating them. They are, after all, often charmingly descriptive and contribute richly to our vocabulary. In a context where their meaning is clear, there is nothing wrong with using them. To refer to gardener's garters rather than *Phalaris arundinacea* var. *picta* and King Edward potatoes instead of *Solanum tuberosum* 'King Edward' is often the only sensible option. The same is true when we talk about wallflowers, daffodils, pansies and other common garden plants, either amongst our friends or for an audience likely to share a similar linguistic experience. Only when communicating with a large audience, as books and magazines must do, is it necessary to think more carefully about using precise botanical names – and of course when ordering the latest introduction from a far-flung corner of the world, whose common name (or names) might be even more difficult to get to grips with than, for instance, *Xysmalobium stockenstroemense* or *Romanzoffia unalaschcensis* – or would it?

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