How orchids are named – an introduction.

Orchid names operate like names for any other plant, with the exception of man-made orchid hybrids for which a category called a grex is used.

A full name for a species or cultivated orchid usually consists of several parts: a genus (plural: genera), a species epithet, and a variety or cultivar epithet. (There are other ranks that intercalate between these three basic ones such as *forma* which is one rank below variety. Also each rank can have a subdivision, such as *sub-genus*, *sub-species* and so on. But for simplicity these are omitted here.)

Each one of these parts to the name is at a different rank that enables the names to be sorted in to categories for ease of reference and data retrieval, rather like a postal address.

Just as a postal address consists of a set of ever decreasing limits: country, county, city, town, street, house number, individual person, so a biological name consists of a set of decreasing limited groups that can narrow down the identification of an organism to a single individual if required.
Example: *Cattleya amethystoglossa* var. *sulphurea* 'Golden Sunset'
Cattleya is the genus, *amethystoglossa* is the species epithet, and *sulphurea* denotes the variety, while 'Golden Sunset' denotes a cultivar or clone. All these parts together make up the name.

This name tells us that the plant belongs to the genus *Cattleya.* A little familiarity with orchids and one soon knows the general appearance of a *Cattleya*, hence this immediately reveals something about its general appearance, distribution in the wild, cultivation requirements and with which other genera it is likely to cross.
amethystoglossa [literally: amethyst-coloured tongue] is the species epithet. It describes an identifying feature of this species – the colour of the modified petal known as the lip or labellum that helps to distinguish it from the many other species of *Cattleya*.
sulphurea this is a botanical variety. It tells us that the wild population from which this plant originated differed from the usual *Cattleya amethystoglossa* plants by predominantly yellow flowers. Incidentally a botanical variety being a wild population can vary quite a bit, and hence is not equivalent to a clonal or cultivar epithet – something that many fail to appreciate.
'Golden Sunset' is a cultivar or clonal epithet. This narrows the identity down to an individual plant or clone, and is the part of the name that carries an award. It is also the only part of a plant name that is included in single inverted commas. It is not written in italics, and always starts with an initial capital (upper case) letter.

Grex
What about the exception mentioned at the onset that applies to man-made orchid hybrids?
It is a category or rank called a grex (contracted to gx plural: greges, of more usually in horticulture, grexes). A Latin term meaning a flock, as in con**greg**ation. It applies to all the progeny an orchid hybrid regardless of which way round the cross is made (meaning whichever of the two parental plants was the seed or pollen donor makes no difference to the grex name.)

Example: *Papilionanthe* Miss Joaquim gx
Here *Papilionanthe* is the genus.
Miss Joaquim is the grex epithet. The use of grex or gx after the epithet to indicate its rank is optional. In some respects a grex is like a species since it could be made up of thousands of

individual seedlings each slightly different. The seedlings could be sorted in to Groups containing individuals with something in common, such as Late-flowering Group, or Early-flowering Group, Red-lipped Group, Narrow Petal Group, Weird Pseudobulb Group, and so on.
Individual plants that stand out from the others can be chosen and given a cultivar or clonal epithet, which would be a requirement if it is to be shown for an award. A full name for an artificial hybrid might be: *Papilionanthe* Miss Joaquim gx Strong Stem Group 'Peter Piper'
Where *Papilionanthe* is the genus, Miss Joaquim the hybrid grex, Strong Stem Group, and 'Peter Piper' the cultivar or clone. In everyday use the Group part of the name would be omitted.

Guidance notes on creating new grex epithets for registration are available here.
https://www.rhs.org.uk/plants/pdfs/plant-registration-forms/GuidelinesOrchidreg.pdf

Registered orchid hybrid names.
It is the grex that is registered in the International Register of Orchid Hybrids.
The grex is defined by its parentage, as opposed to a description of appearance as is the case with genera, species, varieties, cultivars and Groups. Consequently the Register establishes names by publishing a statement of parentage such as:
Papilionanthe Miss Joaquim = *Ple. teres* × *Ple. hookeriana*
Notice that each orchid genus has an abbreviation to save space: *Ple*. for *Papilionanthe.*
(A comprehensive list of genera with their abbreviations can be found in the hardcopy Addendum volumes to *Sander's List of Orchid Hybrids*, and also on the RHS website at:
https://www.rhs.org.uk/plants/pdfs/plant-registration-forms/orchid-name-abbreviations-list.pdf).
A multiplication sign is used to indicate a hybrid parentage.
The statement above means that the grex called *Papilionanthe* Miss Joaquim is the name that applies to all seedlings derived from any hybrid made anywhere between the two parental species *Papilionanthe teres* and *Papilionanthe hookeriana*, regardless of which was the seed or pollen parent or whichever cultivar or variety of either parent was involved. Consequently a grex can contain considerable variation.

Hybrid genera.
Sometimes two plants in different genera are used to make a hybrid. In these cases a hybrid genus (also known as a nothogenus) is used in the name in place of a genus. The hybrid genus name works like a grex name in that it is defined by parentage not description.
For example if any *Cattleya* is crossed with any *Brassavola* the resulting seedlings are labelled ×*Brassocattleya*. This name is formed from parts of the two parental generic names, *Brassavola* × *Cattleya*. The seedlings will also be provided with a grex epithet as described above, so for example:
×*Brassocattleya* Accent's Pixie = *Cattleya* Jinn gx × *Brassavola nodosa*
where Accent's Pixie is a new grex name for seedlings resulting from a plant of *Cattleya* Jinn grex crossed with a plant of the wild species *Brassavola nodosa*.

If three genera are involved – say the ×*Brassocattleya* was subsequently crossed with a *Laelia* - the resultant seedlings are called ×*Brassolaeliocattleya.*
If three genera are involved in a hybrid's ancestry then the option also exists to name the hybrid genus after a person who was an enthusiast or student of that plant family. At four or more genera (the maximum achieved so far is nine) this is compulsory. The person's name has the termination -*ara* added to make the hybrid genus name.
Hence if the ×*Brassolaeliocattleya* was crossed with ×*Guaricyclia* [= *Encyclia* × *Guarianthe*] the

resulting hybrid would contain genes from five genera, *Brassavola* × *Cattleya* × *Encyclia* × *Guarianthe* × *Laelia,* which combination has been named ×*Pynaertara* for a little-known orchid grower called Pynaert who bred a few hybrids around 1903.
So far at least 3000 of these hybrid generic names have been published mostly for orchids, but many also in other plant families, especially ones that are popular in horticulture or important in agriculture, such as cereal grasses and cacti.

Synonyms and worse things.
It can easily happen that a plant or plants at any rank can acquire more than one name.
When this happens the name that is determined to be valid and accepted is used, and all the other equivalent names are known as synonyms.
In the register synonyms of genera, hybrid genera, species, and grexes are clearly marked as such.

The creation of synonyms might happen for several reasons. A few of these include:

1. Botanists might disagree on the criteria for delimiting a genus or species and hence each opinion may result in publication of a different name for the same entity.
For example:
Currently accepted species name in register: *Cattleya alaorii* (Brieger & Bicalho) Van den Berg in Neodiversity 3: 4 (Mar 2008).
Equivalent names treated as synonyms:
Laelia alaorii Brieger & Bicalho in Bradea 2(17): 107-110 (1976).
Sophronitis alaorii (Brieger & Bicalho) Van den Berg & M.W.Chase in Lindleyana 15(2): 115 (2000).
Hadrolaelia alaorii (Brieger & Bicalho) Chiron & V.P.Castro in Richardiana 2(1): 20 (2002).

Each of the four names above applies to the same species, but each represents a different view of how to classify the species concerned. Only one name can be accepted in any one system of classification, the others then become synonyms of the accepted name. To minimise confusion (such as to avoid registering the same hybrid several times under different names) the RHS Orchid Hybrid Register has adopted the system published in *Genera Orchidacearum* and Kew's World Checklist (WCSP) as a standard set of names. Other authors holding different opinions are free to choose which name to use, but should be consistent within their chosen frame of reference.
Note that to avoid ambiguity botanical names are sometimes cited with the author(s)' names after them, along with the place and date of publication to avoid any uncertainty in their application. In the above example notice how the original authors of the species (Brieger & Bicalho) have their names permanently attached to the species epithet – *alaorii* – regardless of the genus to which the species is transferred. This is because a different species with the same epithet might be transferred into the same genus, and we need to know which is which.

2. Several different botanists may discover a new species at roughly the same time and each describe and publish a different name unbeknown to one another. Unfortunately in orchids there has often been intense rivalry resulting in a deliberate race to publish a new name with the result that several names are published for the same plant within a few days of each other. Usually the oldest name (that is the one first to be published) becomes the accepted one - we say it has date priority - and the rest become synonyms.
For example:
Accepted name: *Phragmipedium kovachii* J.T.Atwood, Dalström & Ric.Fernández, Selbyana

23(Suppl.): 1 (2002).
Synonym: *Phragmipedium peruvianum* Christenson, Orchids (West Palm Beach) 71: 620 (2002).

Both names were validly published within a few days of each other. Because *Phragmipedium kovachii* was published on 10th June, it has date priority over *Phragmipedium peruvianum* published in July.
Note that to avoid ambiguity botanical names are sometimes cited with the author(s)' names after them, along with the place and date of publication to avoid any uncertainty in their application.

3. Several different hybridisers make the same cross for which each provides a different grex name. *Paphiopedilum* Hera, a grex named by Veitch in 1892 has the following synonyms: Adrastus, Boxalli-Leeanum, Brunnianum, Euryades, Gillianum, Jean Magne, Leeano-Boxallii, Leonis, Magdalena, Mariae, M. Galpin, Neron, Robustum.
This is an extreme case from the late nineteenth century, before there were codes of nomenclature (that is formal rules on how to name plants). More recently, thanks to better communication of names provided by the Register, most grexes do not have any synonyms, a few have one or two at the most.

4. A similar situation is when several different hybridisers use the same name for different hybrids – the resultant names are called homonyms.
To use the example of *Paphiopedilum* Hera grex above:
Paphiopedilum Hera (1890) = *Paphiopedilum spicerianum* × *Paphiopedilum villosum*
Paphiopedilum Hera (1892) = *Paphiopedilum boxallii* × *Paphiopedilum* Leeanum grex

Two different breeders used the same grex epithet, Hera, in the same genus, *Paphiopedilum*, for completely different hybrids. Two help avoid confusion the year the name was published is added to the epithet. In some instances the name of the breeder is added in parentheses. Very occasionally the same breeder uses the same name for different hybrids in the same year then they are numbered (1), (2) and so on.