

## Coelogyne orchid culture in the Riverina region of NSW

There are over 200 species in the *Coelogyne* (see-lodge-eh-nee) genus (12) and they can be found growing from Nepal and India to China and down through south-east Asia to Papua New Guinea and the Pacific Islands (1). They grow from sea level up to 4000m (2). About 39 of the genera are readily available in Australia. Those found growing above 1500m are usually suitable for growing in a shade-house in the Riverina and cool temperate environments (2).



Commonly available species include *Coelogyne cristata*, *flaccida*, *tomentosa*, *frimbriata*, *nitida* and *mooreana*, all of which originated above 1000m and are suited to growing in an unheated shade-house in the Riverina region of NSW, although *C. flaccida* may be marginal (2). *C. cristata* comes from altitudes 1700-2300m and is the most widely grown species (2).

A list of the cool growing highland *Coelogyne* and the altitude they are found growing is given in the web article by Brian Milligan (10). Most of these should grow in a shade-house in the Riverina.

Species with large coloured flowers such as *C. lawrenceana* and *C. speciosa* require warmer conditions (11).

Other species such as *C. pandurata*, *C. dayana* and *C. massangeana* come from swampy lowlands and require very warm more humid conditions year round (8°C-32°C) provided by a glasshouse and are less suitable for a shade-house in the Riverina (6, 11).

Several hybrids have also been developed. These include Unchained Melody, Edward Pearce, Jannine Banks, Memoria Louis Forget and Memoria W. Micholitz. Most *Coelogyne* in nature grow as epiphytes in partial shade although some are lithophytes.

The growing habits vary from clumping types to others that produce woody rhizomes with pseudobulbs located at intervals along the rhizome. They bloom in late winter and spring with flower colour ranging from white to cream or pale green. Some species may flower several times a year. They only flower from new growths (1). Flowers of some species are very fragrant. In some species, such as *C. cristata*, the flowers develop from the base of mature pseudobulbs, but in others, such as *C. mooreana*, they appear from the centre of new growths.

They are not as widely grown as many other orchids, perhaps because the flowers are relatively short lived, although they can be profuse flowering and fragrant.

### Temperature requirements

*Coelogyne* temperature requirements will vary with their origin however most prefer cool to intermediate temperatures and are suited to shade-house conditions in the Riverina. They must be kept cool over summer with misting if necessary (1). *Coelogyne cristata*, the largest flowering member of the species (see photo above), is native to the Himalayas from 1500-2600 m and experiences temperature extremes of -7°C to 33°C. It requires cold nights

to induce flowering. Night temperatures in winter in its natural habitat are typically 2°C to 4°C (7).

Another cold tolerant species, *C. mooreana*, comes from lower altitudes (1200-1300 m) in Vietnam with milder winter minimum temperatures of 12°C although lows of 5°C are possible in its native environment. It can flower several times a year.

A few species from lowlands in Malaysia and Vietnam require higher temperatures and are not cold tolerant and require glasshouse conditions in cool temperate regions such as the Riverina, with a minimum temperature requirement of 12°C (1,6).

The optimum temperature range for highland cold tolerant species is between 12°C and 28°C although local experience in the Riverina region of NSW indicates they will tolerate a low of 0°C in winter. They will tolerate daytime temperatures in summer as high as 40°C for short periods providing they are shaded, kept humid through misting and night time temperatures are lower (20°C). Growth will be slower, however, if optimum temperatures are exceeded. Humidity and airflow must be kept higher as temperature increases.

Although many are tolerant of low temperatures down to 0°C, they will not tolerate frosts and overhead protection is essential (2).

Flowers last for up to 6 weeks if plants are placed in a cool area with low light during flowering.

### Light

*Coelogyne* prefer medium light (2000-4000fc) and need to be shaded in summer with 50-70% shade cloth (1) but they can be given more light in winter. Some species, such as *C. nitida*, grow in areas receiving lower light levels around 1500-2500fc (7). It is common for the tips of leaves to brown off and is difficult to prevent. Possible causes include too low humidity or insufficient water (11).

### Humidity and air movement

They prefer a humid environment with humidity of around 80% year round and preferably >50%, however local experience is that they will tolerate 20% humidity for short periods in summer if misters are used to temporarily raise humidity levels during the day. Cold tolerant species are best grown in a shade-house and tend not to flower as well in a heated glasshouse. They like unrestricted strong fresh air movement, so avoid areas with poor airflow (1). Species such as *C. nitida* grow in year round mist in their natural habitat (7).

### Water

*Coelogyne* from cool growing areas have a well defined growing and resting period and require a drier rest period over winter. (1). This dry rest is considered essential to promote flowering in *C. cristata*.

They come from very high rainfall areas and should be kept well watered during their growing period and particularly in hot weather (10, 11). They should be misted or infrequently watered though winter, about once per week or less, to prevent the pseudobulbs from shriveling excessively. It is not uncommon for the



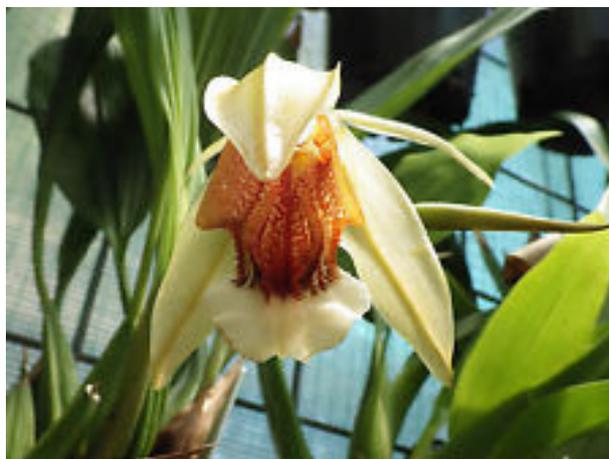
pseudobulb of some species to shrivel somewhat during the resting period but they plump up again when they resume growth (10). If they don't shrivel a little they may not flower because of too much water (11). Conversely if leaf tips die back excessively this could indicate too low humidity or insufficient water (11).

Some overhead cover is beneficial in winter to protect them becoming too wet and from frosts (2). Flowers will mark if wet.

Species from warmer lowlands can be watered year round.

### Potting medium

Most *Coelogyne* are grown in squat pots although *Coelogyne ovalis* can be grown on a mount provided moisture is maintained. Those with pendulous flower racemes or long rhizomes such as *C. flaccida* are best grown in baskets (12).



Most *Coelogyne* have very few roots and new growths younger than 3 years can have none (2). When making divisions it is important to try to have roots on each piece. If roots are very sparse it is best to pot them in moisture retaining sphagnum moss where they should quickly develop roots (2). If potted directly in an open bark mix, the pseudobulbs may shrivel and take up to 2 years to retain the plump condition.

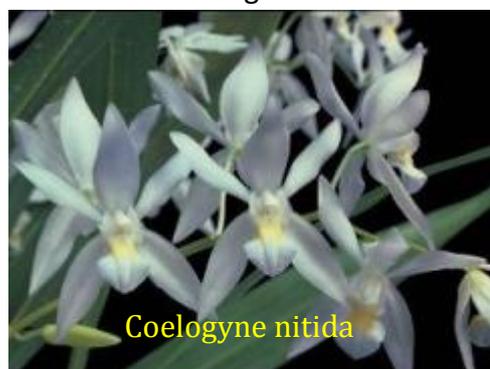
*Coelogyne* have a reputation for not liking to be disturbed and will frequently not grow or flower for 2-3 years after repotting (11). As a result they should only be repotted and subdivided when absolutely necessary. The best time to repot is when new growth commences or immediately after flowering (10, 11). To avoid disturbing them, old bulbs can be cut out to make more space (11). Alternatively simply pot the plant on into a larger container (11).

A bark perlite mix with good drainage is suggested as a potting medium with 80% bark, 10% river gravel and 10% perlite (1), but some growers use a perlite and vermiculite mix.

Some growers also include some chopped sphagnum moss to maintain moisture, particularly where there is very good air movement (2).

### Fertilizers

Fertilizer strategies vary. Some recommend frequent application of half strength fertilizer during the growing period but not in winter. Other growers find the application of slow release fertilizer in summer and autumn best. A low N, high phosphorus fertiliser is recommended in late summer-autumn to promote flowering (7, 11). To prevent salt buildup, leach the pot every 3 weeks during periods of high or frequent fertilizer use (11). This is done by watering the plants and then an hour later flush the pots again once the salts have had time to dissolve (11).



### Cultivars for the Riverina region of NSW

*Coelogyne cristata*, *C. flaccida* and the hybrid *Coelogyne* Unchained Melody (a hybrid of *C. cristata* and *C. flaccida*) are considered relatively easy to grow in southern Australia and the Riverina region of NSW under shade-house conditions without heating.

*Coelogyne speciosa* from Malaysia and Indonesia is a cool to intermediate type with very large flowers, which can be green, white or brown. It can be grown in a protected shade-house in Adelaide and so should be suitable for a shade-house in the Riverina. It is regarded as a hardy easy to grow orchid that is tolerant of hot conditions but also of cold. This species flowers year round but most heavily in spring. There are many hybrids produced with this species. The photo top right is reported to be *C. speciosa* although the flower can typically have stronger green colour in other selections of this species. It comes from PNG and Indonesia and is reported to be hot tolerant despite being found at elevations up to 2000m (9).

*Coelogyne corymbosa*, *cristata*, *flaccida*, *huettneriana*, *lawrenceana*, *nitida*, *ovalis*, *tomentosa* and *C. Memoria* W. Micholitz are listed as the most cold tolerant.

The plant in the pot opposite is *C. mooreana* from elevations of 1200-1300m in Vietnam. It typically experiences a temperature range of 5-32°C (11). It is also suitable for growing in a cool shade-house in the Riverina region.

David Banks has given a very detailed listing of over 30 *Coelogyne* species in cultivation in his publication listed below (1). Other excellent sources of images and descriptions of the different species/cultivars and growing guides are the web sites by the American Orchid Society site (11) and an Australian based grower Kevin Dawe (12) and both of which are listed below.

Leaf tip die back in this species is difficult to prevent (11). The possible causes include insufficient water, too low humidity, or build up of salts requiring flushing of the pot.



#### **Acknowledgements and further reading:**

This fact sheet has drawn on information by local growers and the references listed below.

1. The Genus *Coelogyne* by David Banks.  
<http://www.oscov.asn.au/articles5/coelogyne.html>
2. *Coelogyne*s for the shade house by B. Milligan. Orchid Societies of Victoria.  
<http://www.oscov.asn.au/articles3/coelogyne.htm>
3. *Growing Orchids in Cool Climate Australia* (2<sup>nd</sup> edn) by MJ Fraser, J Wright, W Ferris (2013).
4. *Gardening Australia Flora's Orchids*. ABC Books (2005).
5. *Orchids, A practical handbook*. By B and W Rittershausen (2001).
6. Charles and Margaret Baker Fact sheet. *Coelogyne pandurata*.  
<http://www.orchidculture.com/COD/FREE/FS289.html>

7. Charles and Margaret Baker Fact sheet *Coelogyne nitida*.  
<http://www.orchidculture.com/COD/FREE/FS285.html>
8. Cool Growing Coelogyne Culture by Charles and Margaret Baker.  
[http://www.orchidculture.com/COD/FREE/Coel\\_Art.html](http://www.orchidculture.com/COD/FREE/Coel_Art.html)
9. Coelogyne speciosa. <http://coelogynes.com/Species%20Coel%20speciosa.html>
10. Cool-growing Coelogynes by Brian Milligan.  
<http://www.oscov.asn.au/articles/coelcool.htm>
11. The large flowering, cool growing coelogynes. American Orchid Society.  
<https://www.aos.org/Default.aspx?id=477>
12. Kirribilli Orchids. <http://coelogynes.com/index.html>

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These notes are intended as a guide only and are composed from available information and local experience. The Wagga Wagga Orchid Society and its members are not responsible for any loss or damage.