

Some Notes for Beginners – episode 2 – Jim Brydie

I want to start this month by outlining my intention with these notes and that is to give general information and basic grounding that will give you a base against which you can interpret the more specific advice you read elsewhere. I may include some culture info here and there, but it is not intended to be comprehensive, not the step by step that you keep on hand to refer to in the future. There are other, more specific sources for that. For example, just this month, Ray Clements of Tinonee Orchids has kindly given us his permission to put his articles on how to grow many of the popular orchids, up on our web site. The articles were recently published in the Australian Orchid Review, and were very well received. The Aust. Orchid Review is a great magazine by the way, a bi-monthly glossy magazine full of orchid info. If you aren't already a subscriber I strongly recommend it. It is probably still available through many newsagents at present but I have heard that in the future sometime, it may go subscription only.

In all the advice I give, please remember that there are nearly as many opinions about growing orchids as there are orchid growers. It is almost certain someone somewhere will disagree with something I say, or even have contradictory opinions. Each person tells you what they know works for them. It may sometimes seem contradictory but most of the time it really isn't. Each may be right in their own context. Always keep an open mind.

With that all said, let's start with Tough versus Touchy.

1. Some are tough - Most orchids are hardy little so-and-so's, and will grow and flower in far less suitable conditions than they would really like or need, even if they don't quite do so to their full potential. Other orchids are far less accommodating, and will die at the drop of a hat if conditions are wrong. When you start out with orchids you probably only have a few plants and you are feeling your way as you learn. If one of your orchids dies, you will be sure it is something you did wrong, or didn't do right. In reality though, most early failures are due to trying to grow something that's just too hard, without the environment or knowledge to meet its special needs.

Failing with an orchid when you are starting out is a big turn off, so you can maximise your chances by growing the tough ones. You will naturally expand into a wider range of types as you grow in confidence and experience, but hopefully by then, you won't worry so much about a few failures here and there. And be assured they will occur. Every grower kills a few orchids from time to time, and if it doesn't happen, you aren't being adventurous enough.

I will never forget a talk I heard by a now retired orchid grower/nurseryman from Newcastle about two years after I joined our society. It was called "Orchids I have Killed" and it was an eye opener for me. The speaker, a top class grower, would show us a picture of a fantastic orchid, tell us about how he imported it at great expense from Thailand or somewhere, how he grew it well and got prizes at shows etc, and then end with "it is dead now" and flick to the next one.

At the time, although I was new to orchids, I was a qualified horticulturalist, and I was killing about 20% of the orchids I tried to grow. I didn't tell anyone about it because I was rather ashamed at my lack of success. I didn't think orchid growers ever killed orchids, so 'Hughie from Newcastle's' admissions were amazing and I soon found that having an orchid die on you was common. Especially when you tried to grow the more exotic types. I could see I wasn't alone after all and it made it much easier to ask for help and get advice from the more experienced growers.

Getting back to the topic however, my advice is to not get into the exotic orchids too quickly. Start with the tougher ones, like those I recommend in these beginner articles, or others advised to you by experienced growers.

And this sort of leads me on to our next topic.

2. "Oils ain't Oils Sol" - I always loved that expression in the old Castrol oils TV advert. You know the one, where the Mafia gangster boss criticises his motor mechanic for using a cheap oil in the boss's car. Well my point, obtuse as the connection may be, is that you can't treat all Dendrobiums in the same way, or all Coelogynes, or all oh well, you get the idea.

If you like Dendrobiums for instance, and that was my first favourite genus, and you would like to try and grow a new species or hybrid that you may have seen, you first need to find out a bit about it. The obvious questions to ask the seller are "will it grow cold" & "how do I grow it". There is nothing wrong with asking the seller these questions but the next two paragraphs expand a little on the context.

When asking the seller "how do I grow it", I don't mean that you should ask for a full set of annual instructions. I am assuming for example, that you already know how to grow a few and are looking for comparative advice against a culture regime that you already understand. For example, you might already grow 'softcanes' quite well and want to know if the new prospect also grows like that, ie with a drier Winter rest. Therefore, the question might actually be better put as : "Do I grow it with my softcanes", or alternately "do I grow it in the shadehouse with my kingianums".

The question "will it grow cold" is a more complex issue than people think. I must get asked this question hundreds of times a year and I often wonder how much information I can give without the face in front of me going blank. I know they all just want me to say either yes or no, but it can be such a no win question. I think I will take this opportunity to make my next subject 'cold or not'.

3. Will it grow cold? – What is generally meant by this, is whether an orchid can be grown in an open to the weather

shadehouse habitat in a backyard in Sydney, or whether it needs a heated glasshouse. However, there are several contentious aspects to this seemingly simple question. Clearly, something considered a 'cold' grower by someone in Brisbane might not be considered so by a grower in the colder climate of Melbourne. Similarly, there are quite significant differences in minimum temperatures in various parts of Sydney's suburban sprawl, let alone taking into consideration favourable housing locations versus less favourable, even within a single suburb. For example, Trevor Onslow lives only 2.5km from my home but my backyard gets up to 3°C colder during Winter than his does. Trevor lives along the crest of the valley ridge and I am about two hundred feet lower down on the western side of that ridge. The sun rises later for me and even day-length is affected to the extent that, on average, my orchids flower several weeks later than Trevor's.

Still, the temperature differences between us are only a few degrees Celsius, just how much difference can that make? Well the answer is none at all in some cases, but in others, it makes all the difference in the world. Orchids don't come stamped cold or hot. In reality, every orchid fits somewhere on a sliding scale between the two extremes.

It is a feature of mankind's thinking process that we try to simplify things and reduce the complex to something more easily stated. For at least the last 50 years, and for goodness knows how long before, the orchid community has used just three terms to designate temperature requirements for an orchid – ie Cold, Intermediate, and Hot. A useful system to be sure, but I would like growers to better understand what all this means and to be able to make their own assessment about whether they should try that particular one at all, or if they happen to be lucky enough to have both cold and warm habitats, which of those habitats would be the best for it.

Temperature tolerance is a genetic factor in plants, the same as it is in animals. In nature, the vast majority of our orchids come from the tropics, and that immediately conjures up an image of hot steaming jungles. You may be surprised to hear however, that a large proportion of the tropical orchids don't come from the steaming lowland jungles. Some do of course, but most come from the jungles higher up on the sides of mountains where there is stronger airflow and frequent afternoon rain from the moist coastal air cooling as it rises against the mountains. The higher above sea level a plant is found, the cooler temperatures it must tolerate, and assumptions can be drawn between the altitude at which a species is found in nature and its tolerance to a range of minimum temperatures.

There are no hard and fast rules to be drawn from this, but it is a direct relationship, and I have set up the table below to interpret it for you according to my own experience. I have drawn the relationships fairly conservatively to provide a safe initial try out point. In many cases the orchid will grow colder, but there will also be cases where you might need to go warmer. Please note that the "suggested minimum temperature" is that which the orchid should tolerate without harm. It is not the ideal minimum temperature it would prefer.

Altitude information is readily available for species because it is part of the scientific data accumulated when they are studied in the wild, so the table is obviously more directly applicable to species. However as all hybrids are basically just a mix or two or more species, one can use the same table for them, once you know their make up, and that isn't hard to do with computers these days.

To find out the altitudes at which your species occurs, try Jay Pfahl's Internet Orchid Species Photo Encyclopedia at <http://www.orchidspecies.com/> It provides photographs and textual info on many thousands of species orchids and for most, they also give the altitude band in which it occurs in nature. For example, for *Coelogyne cristata* it says that it comes from northern India to Java at 1500-2600 metres, and as we already know, that species does grow cold.

***Altitude interpretation table for TROPICAL orchids (ie from between the Tropics of Cancer and Capricorn)
Plants from more Temperate Zones (ie further south or north) are thus non tropical and will obviously grow even cooler.***

Maximum altitude	warm or cool?	Suggested Minimum Temperature
Sea level to 800m	warm	suggested minimum temperature at least 10°C, (15+°C is better)
900m to 1500m	warm to intermediate	suggested minimum temperature 5 to 8°C
1600m to 2300m	intermediate to cold	safe minimum temperature 5°C - but will often take much lower
2400m or above **	cold	usually easily tolerates 0°C

** Please note that while orchids from higher altitudes tolerate cold well, they may also resent very high summer temperatures.

4. Some other Basic Culture Tips

(a) Air – You would hardly think that air is a topic worth discussing in regard to plant culture, but most epiphytic orchids have evolved to fill niches in nature where there is lots of the stuff. Although growing in trees was driven by light and not necessarily air, most seem to strongly resent stagnant areas in our growing houses, or even being crammed together so that they all create their own little stagnant patches. When you put your orchids into their allotted growing area, try as best you can to give them space, and if they are in a closed house, they will do much better with a fan going 24 hours a day. Not blowing hard directly at them, but preferably, moving the air above them.

In my experience, orchids also do far better on wire mesh benches than on solid surface benches or even wooden slatted benches. Some even insist on being hung above all the others. This may be related to a need for air flow around them or perhaps more indirectly, the extra air helps dry off excess water more quickly when they are wet.

(b) Fertiliser - Gardeners all know that you need to regularly apply fertilisers to grow good healthy plants. The same applies to orchids, but with a significant difference in the detail. Ground plants like shrubs, and trees etc, have

access to the natural minerals in the soil, that come from the breakdown of rock and stone, and from the rotting humus of leaves and animal droppings etc that lays on top of it. This is without any additional fertiliser added by us. The orchids we grow aren't as lucky. The medium in which we grow them has virtually no nutrient value at all and nor does the water from our taps, unless we add it ourselves. In their natural habitats they do a little better. The water that drips on them, from the tree leaves above, contains a weak nutrient soup. The mineral laden ground water is sucked up by the tree roots and transported right up to the canopy where it is exuded by the leaves. The water that washes down in rains also includes the dissolved droppings of any bird/insect/animal that lives in the canopy. A weak soup I know, but constantly available.

For orchids growing in our artificial environments, we need to supply all the nutrients. When I tell a new grower that this should be half strength soluble fertiliser at least once a fortnight, I often see a look of total disbelief, but I assure you that all the good growers apply fertiliser regularly.

Orchids won't die if you only fertilise them a few times a year, but you won't grow them anywhere near their best either. Have you ever noticed how lush and healthy orchid nursery plants look? Would it surprise you if I told you that many nurseries apply very weak fertiliser with every watering? I am not quite that assiduous with my collection but I do try my best to fertilise every second watering. When I retired a few years back, and was finally able to improve my fertiliser routine, better growth was nearly immediate.

Finally, and there is no clear consensus on this, I strongly prefer soluble fertilisers to the slow release, coated pellet kinds. Because orchid medium is so coarse, I don't trust the release rates of the pellets and you never know exactly when they are emptied and useless. Organic fertilisers like Dynamic Lifter are effective but they contain a high proportion of solids that eventually gets down into the mix and clogs up pore spaces. I would rather apply fertiliser that I dissolve in water, and water on. That way I know: **1.)** they got it, **2.)** when they got it, and **3.)** that one watering later, it is nearly all flushed out, and more is needed. It's a bit of work but you have to water anyway so why not.

5. Light levels – The recommendation for providing a good average light level for orchids, is to use 50% shade cloth, but that assumes a shadehouse position in full sun, unaffected by nearby trees or buildings etc. It is a measure that ensures the orchid won't get too much light to burn the leaves, but will get enough to grow and flower well. It is a reasonable median for all orchids, but some naturally like more light, and some less.

The technical measure for light levels is expressed in foot-candles or lux. One foot-candle = 10.76 lux. To give you an idea of brightness, the illumination level inside a supermarket, which may seem bright, is around 500 foot-candles, which would be too low for orchids. There are published lists for how much light various genera seem to prefer, usually expressed in foot-candles, and the recommended levels for some of the most popular groups are:

Genus	foot-candles	Genus	foot-candles	Genus	foot-candles
Cattleya/Laelia	2,500 to 3,500	Masdevallia	1,000 to 2,500	Phalaenopsis	1,000 to 1,500
Cymbidium	2,000 to 4,000	Odontoglossum	1,000 to 2,500	Vandas	2,500 to 4,000
Dendrobium	1,500 to 4,000	Oncidium	2,000 to 4,000		
Epidendrum	1,500 to 3,500	Paphiopedilum	2,000 to 3,000		

If you want to check the light level in your current growing areas, but you don't have a proper light meter, here is a practical method using an old fashioned 35mm SLR camera, courtesy of the River Valley Orchidworks website.

Set the camera's film speed to ASA 200, and its shutter speed to 1/125 of a second. Aim the camera at a white sheet of paper placed where your orchid is growing. Get close enough so that the meter records only the light reflected from the paper. The paper must fill the viewfinder. Focus on the paper and adjust the lens aperture until a correct exposure shows on the camera's light meter. Once the exposure is correct, look down at the aperture setting on the lens. The F-stop reading will convert approximately into foot-candles as follows:

F-stop	Foot-candles	F-stop	Foot-candles
2.8	32	11	500
4.0	64	16	1000
5.6	125	22	2000
8	250		

In case you were wondering, Wikipedia tells us that full unobstructed sunlight is about 10,000 foot-candles, and an overcast day will produce about 1000 foot-candles, so you can see why we talk in generalities most of the time. 10,000 foot-candles will burn leaves for sure, but 50% shade cloth would leave you with 5000 foot-candles maximum at noon. 50% shade cloth by the way, is named that way because it lets through 50% of the light that falls on it from directly above. Even 5000 is still a little too high theoretically, but as the sun moves across the sky the angle changes, clouds appear and disappear etc, so the average will be substantially lower and perhaps closer to 3000. No wonder it is about right for most. Cymbidiums might do better with 30% however, and Phalaenopsis say 70%, but within your greenhouse there are also brighter and darker spots so it is easy enough to find the right niche.

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