

The Orchid Doctor is in

Presented 9/5/08 to the Kona Orchid Society

By Charles R. Pikcunas

Copyright 2008

The key to understanding orchid culture lies in an understanding of the plants natural habitat.

No plant was born to grow in a pot and unless you live in an orchid-rich environment, all growing conditions will require some degree of adjustment and compromise.

The vast majority of orchids are epiphytes, living high in the forest canopy, not terrestrial or living on the ground.

Adapting to life in the forest canopy gave them better light conditions, temperature variance which enhanced blooming, air movement which helped prevent disease and which also spread their microscopic seed far and wide.

To be successful, we need to simulate that environment as best we can in our growing space.

Temperature varies with the distance from the equator and the elevation. We cannot move our island from where its at, but we can select plants that are appropriate for our elevation. Most cymbidiums will not grow at sea-level but will thrive at about 1500 feet. Conversely, phragmipediums will freeze their roots off if you try to grow them at that elevation.

Light can be controlled by shading, or by placement of your plants. If the light is too low, supplemental artificial light may be added or overhanging branches pruned back. Just respect the natural day/night cycle or blooming will be affected.

Light does not burn foliage, though it may bleach it and reduce its effectiveness in feeding the plant. Heat burns foliage. If growing in a high light environment, be sure that there is adequate air movement to keep the leaves from burning.

Humidity in Hawaii is rarely a problem. 40% - 60% is considered perfect for most orchids. If your humidity is

too high, try to increase the air movement. If too low, install misters. However, avoid wet plants at night. Fungal and bacterial infections thrive in dark, dank environments and can decimate an orchid collection in a very short time. Always water or mist early in the day so that your plants can dry off before nightfall.

Pots are an artificial environment, but a necessary evil for most of us. But not all pots are created equally.

Overall, slotted clay pots in an azalea shape are the preferred orchid pot and the most expensive solution. They dry quickly, offer good air movement in the root zone and are resistant to tipping.

Plastic pots are much cheaper, easier to sterilize and re-use, and less prone to breakage. But be sure to purchase only pots with adequate ventilation in their base. If you cannot find an "orchid" pot, drill additional holes into a heavy weight plastic pot until you feel that enough air will reach the roots of your plants.

Crocking, or the practice of putting inert material in the bottom of a pot, is a "crock". Commercial growers have traditionally placed Styrofoam "peanuts" into their pots and told us that they were meant to enhance drainage. While they do offer minimal help, what they actually do is save the grower money since "peanuts" are cheaper to buy than good potting mix, and lighter to ship.

However, If the pot is properly designed, "peanuts" or any additional crocking is really not necessary for drainage. What it is necessary is stability. A pot with peanuts in its bottom acts like a boat without a keel. The least breeze against the plant will cause the pot to fall over since its center of gravity is too high.

Therefore, if you feel you want to crock your pots, use broken clay pots, or washed river rock in a size similar to the bark you are using in your mix. This will weight your pot and anchor it in a storm.

Orchids grow on trees, not in potting mixes. And even in the trees, they don't grow like an octopus thrown against a flag pole. Instead, their seed germinates in crevices,

knot holes, crotches of branches and other areas where detritus accumulates and decomposes.

So, If you can't mount your plants in baskets or on tree fern plaques, your potting mix has to simulate that loose, nutrient rich detritus for your plants to thrive.

A good mix has three elements: bark for bulk, perlite for moisture retention and some natural element like tree fern, sphagnum moss or peat to buffer the mix and make the roots feel at home. A proper ratio is 3 parts bark to 1 part each of perlite and fine tree fern. I also add a time release fertilizer to my mix just to make sure that freshly potted plants have some nutrition available immediately.

Healthy growing conditions make for healthy plants. Always clean up debris from your benches and growing area, and clean up the plants themselves from dead leaves and spent spikes.

Try to provide sufficient air movement not only in and around the plants themselves, but through the potting media. Decomposed media compacts, restricts air movement in the root zone and ultimately will kill your plant.

There are no hard and fast rules about watering other than use tepid water (not too hot/not too cold - but just right) with a reasonable Ph level (not too acid or too alkaline).

An old saying was that if your cattleya or epidendrum feels light and dry, give it another day before watering since they like it on the dry side.

If your phalaenopsis or paphiopedilum feels light and dry, you should have watered it yesterday since they like it evenly moist.

And if your cymbidium or phragmipedium feels light and dry, you've probably killed it since they need to be constantly wet having grown naturally on the edges of streams.

While you can't control the rain if you are growing outdoors, you can control the media or pot that your plant is growing in. If growing in a wet zone, switch to coarser bark for your mix, delete the perlite, or go to baskets and tree fern mounts. If your area is too dry, switch to

plastic pots and increase the perlite and tree fern in your mix.

All plants need to eat and orchids are no different. But in the forest canopy, all they get is an occasional bird dropping and some rotten leaves to live on. If you load them up with a lot of chemical fertilizer, they won't know what to do with it and may just become fertilizer junkies, growing huge, but never flowering.

Therefore, try to use organic fertilizer such as fish emulsion, bat guano, sea weed extract, etc. These won't burn your plant's roots and their nutrients are readily available for the plant to use.

Avoid any fertilizer with high numbers on its label. Excessive levels of any element whether nitrogen, phosphorous or potassium will shock the plant like when you drink Red Bull. It will give it a quick boost, but then it will languish and you will be tempted to hit it again with the same fertilizer. Ultimately, you will kill it.

Try to avoid fertilizers that use urea based nitrogen. Urea needs the organisms in the soil to break its chemical bonds down and make it available for plants to use. Works great on corn or grass, but not so much on orchids since we don't grow in soil mixes. In bark, urea just burns the roots, causes the tips of your leaves to turn brown or black and is ultimately wasted and washed away as chemical salts.

That is why old books suggested 30-10-10 fertilizer in bark mixes. The urea wasn't being used efficiently and therefore you needed three times as much of it. Better to use a balanced fertilizer like 10-10-10 based on a nitrogen source other than urea.

So then, what's bugging you? All orchids grown outdoors are subject to disease and insect infestations. Get a book to help you identify what your problem actually is since an insecticide is useless against a bacterial infection.

When using chemicals, try an escalating scale of remedies and stop when the pest is gone. Start with insecticidal soaps, neem oil or alcohol. These are readily available, cheap and have a very low environmental risk, but may offer only a low control of the problem. And remember, alcohol

is only an bacteriacide, not a viruscide. When you disinfect your potting tools, alcohol will be ineffective in stopping the transmission of viruses.

To stop virus transmission, you must use either a saturated mix of tri-sodium phosphate (which will rot your tools), a 20% mix of chlorox/water as directed by the HDOA (which will bleach your clothes) or flame your tools with a torch.

The next level of control is offered by garden chemicals like malathion and sevin. These are readily available, approved for ornamentals, but must be applied several times a few days apart to make sure that every stage of the insect whether adult, larva or egg, has been killed. These are poisonous, so care must be taken in their usage.

Finally come the systemics like Merit. They are long lasting but expensive. They are absorbed directly into the plant and digested by the insects when they feed or suck on the foilage. However, they pose the most danger to the applicator and may cause crippling of that year's flowers. So use with caution.

In order to enhance the application of any spray, you should use a spreader/stickler. This can be either a commercial product or dawn dishwashing soap. Avoid Ultra-Dawn because the additional ingredients may be toxic to some plants or change the effectiveness of the spray mix. They make the spray adhere better to the plant and actually go further and they cost very little. Just a drop or two per gallon is enough to get the effect you want.

And while we are at it, remember to clean your equipment. Chemical residues build up in your sprayers or watering cans. They can contaminate future mixes or change the concentrations that you want to use. Clean your equipment with a 10% chlorox solution followed by a warm soapy bath. Or, you can purchase a commercial tank cleaner which will do this all in one step.

When using any chemical product, READ THE LABEL, FOLLOW ITS INSTRUCTIONS, and DISPOSE OF THE LEFT-OVER MIX AND CONTAINER PROPERLY AS DIRECTED BY THE LABEL. It sounds like common sense, but many people don't bother with this simple precaution.

The best way to grow good orchids is to start with superior stock. When shopping for an orchid, focus on the plant, not the flower. Spectacular blooms may be induced by commercial growers to the detriment of the plant. If that is all you want, buy cut flowers, not a living thing.

Small flowers or few blooms are normal on a seedling plant. The size of the flowers and their number will increase as the plant grows. Be patient.

A healthy, well-grown plant will tolerate a change in its growing conditions or location better than a sickly one regardless of how pretty its flower may look. An old saying in the orchid world in response to an impressive flower is "Yep, they always do that right before they die".

Look for firm foliage without blemishes or color variations. Grass green leaves mean it was grown in good light. Bronze or red leaves mean that it was grown in bright light and will probably reward you with more flowers. But dark green leaves usually mean that it was grown in low light, will have weak growths and will flower poorly.

Likewise, plump, healthy looking pseudobulbs or canes are an indication of a healthy root system. But remember some species like dendrobiums drop their leaves upon maturity or species like cycnoches have old shriveled pseudobulbs after they have flowered. Know your species and you will have a template against which to judge the health and vigor of any new plants you acquire.

Roots, if visible, should have white or grey velamen and green or red growing tips. Roots rapidly growing out of the pot or outside the media are a good sign of vigor and health.

Learn to recognize insects and their damage and the symptoms of a virus infection. Pass on plants that may be already sick or infected.

ONLY buy plants with name tags. If you don't know what it is, you won't know how to grow it. Furthermore, you can't show it in any organized orchid show. Demand a name tag from the grower. If he refuses or is unable to give you one, he is probably selling off his rejects and you should pass on those plants too.

Finally, remember to keep your standards high and you will be rewarded with award quality orchids. Sick, mis-labeled or infested plants have no business in your orchid collection.