

# Reflections on Potting Orchids

by Andy Easton, courtesy of the American Orchid Society

Whole books have been written on the subject of potting orchids, which inevitably provokes vigorous discussion whenever orchid enthusiasts gather. Variances of opinion and technique can coexist harmoniously and what is right in one set of circumstances may very well be completely wrong in a differing situation. Emphasizing that these broad comments essentially reflect my own experience with orchids, I hope that readers will feel comfortable taking from this article that which they find useful and forgetting suggestions that they know have little relevance in their own growing environment.

**When to Repot** For many beginning growers, knowing when to repot can be quite traumatic. Here are some suggestions to make the process easier. Some media have a much shorter pot life than others and the situation is further complicated by water quality and the fertilizing regime. For example, good New Zealand sphagnum moss lightly fertilized with superior water will maintain its qualities for 12 to 18 months. Lower-grade Chilean or Chinese moss, heavily fertilized with water containing excessive levels of dissolved salts will have seriously broken down within six months. Artificial media like Rockwool may be affected by the buildup of salts, which is something of a management problem, but the basic material is everlasting.

Genera like Paphiopedilum and Phragmipedium, many members of the Odontoglossum Alliance and Phalaenopsis thrive on regular repotting and mix freshening. Timing is still important, however. Never repot plants, if you can avoid it, in the six-week period leading into the shortest day of the year and shy away from hot summer weather, too. At both extremes, orchids will be shocked and recover slowly from repotting at the wrong time.

Most genera, among them Cattleya, Cymbidium and Dendrobium, will often flush in growth right after the flowering season and repotting can be tailored to this sequence. In the case of Cymbidium and temperate Dendrobium, the growth cycle is closely linked to monsoon rains in their native habitat. Cattleyas and their relatives are usually repotted when they have new growths at or beyond the pot rim when it is easy to see the new roots developing. Do not rush this process; if you damage very short incipient roots they will wither, whereas longer roots can branch and regain momentum quickly.

Enthusiasts should always look for media that will give them the longest normal time interval between pottings for the genera they grow. Most successful media for Cattleya, Cymbidium and Dendrobium should have a two-year life when used in larger pot sizes.

A maxim for young plants that is widely-accepted is to pot regularly. It is important that juvenile plants never lose their momentum and the early spring and autumn periods are typically when they are handled and moved to larger pots in fresh potting mix.

**How to Repot** If you read orchid books from 50 years ago, potting was indeed a laborious process. However, that did not stop the students in Professor White's book *American Orchid Culture* lining up in their best garb to participate in the exercise. In the days of osmunda and little, if any, fertilizing, the potting ritual was detailed and slow. However, no one paid any attention to virus prevention. Consequently, whole collections of mature plants that had been previously divided on several occasions became largely infected. Virus is an increasing problem today and good potting techniques are vital in preventing its spread. Among these are using sterilized tools for making cuts, and, when repotting, putting down a stack of newspapers and then removing a sheet each time an orchid is repotted.

I enjoy the spectacle of rows of neatly potted plants placed on benches, but I am fairly certain that the roughly potted plants that emerge from the potting machines at orchid factories in Holland grow at least as well or better than any of my efforts. Consequently, I

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am forced to accept that the actual mechanics of the potting process are probably unimportant for hybrids of mainstream genera. Some general rules do, however, apply. When dividing, always handle plants dry, if possible, seal cut surfaces and never incorporate dead mushy root material into the new container. Experienced growers will often construct roots from twist-ties which they curl tightly around the rhizome rather than leave dead roots in place. For sympodial orchids, such as *Cattleya* and *Dendrobium*, pot divisions small enough so they will reach the pot margin in two growth cycles or less. With plants that are particularly overgrown and will be shocked when they are divided, it is often advisable to pot allowing space for only one growth cycle and then pot up or “slip pot” when they have reestablished themselves with an active root mass. Be sure that this slipped plant is in a medium that is either coarser or no finer than the new mix to protect against having the rootball of the plant potted up stay soggy and wet while the more porous surrounding medium is relatively dry.

Many enthusiastic growers criticize commercial producers of blooming orchid plants for the media in which they are sold. This is unfair for a number of reasons, not least of which is that the wider public in many cases will throw the orchids away after the flowers have faded. Some of these commercial orchid-potting media may not suit the typical hobbyist but those with the slightest green thumb should be able to manage to keep the plants alive for the duration of their initial flowering and often much longer.

One golden rule ignored by legions of enthusiasts is to have all plants of the same genus and pot size in the same potting mix. This does not mean that every plant purchase, even those sneaked in by subterfuge, must be immediately repotted if they are in full bloom, but you should have a transition area in your growing facility where new plants reside. It makes sense from a disease prevention perspective too, because giving new arrivals a few weeks in quarantine can help avoid introducing pests and diseases into your collection. But then, when the blooms are spent, or when you have given new arrivals the thrice over, pot them in the same pot type and mix as their benchmates: plastic with plastic, clay with clay and 6-inch pots with 6-inch pots. It is also recommended that you resist the temptation to cram smaller pots into the spaces between their much larger companions, unless you are an experienced and painstaking grower.

**Potting Media** Again, there is no perfect mix for any or all genera of orchids. Maybe the closest are the wires or mix-less baskets we see in the tropics on which epiphytes like *Vanda* and its cousins are often grown and thrive. But with the fresh-air medium, growers are forced to make the daily commitment of watering and feeding necessary for optimal results, a process many enthusiasts are unable or do not wish to make.

Many orchid references say orchids do not grow in garden soil, but do not tell anyone about the *Spathoglottis* growing wild in Hawaii or indeed the various terrestrials like *Phaius* and *Arundina* that thrive in sandy soil at the International Orchid Center in Delray Beach, Florida. In truth, I’m sure it would be possible to grow lovely *Phalaenopsis* in the same soil, in pots, providing it had been sterilized and great attention was paid to the watering process. Of course, this is an extreme case, but what usually happens is that we seek a medium that provides the qualities necessary for the orchids we grow, at an acceptable price, with a reasonably long useful life. The orchid-growing hobby should not normally involve taking the most difficult options - something to which the orchid growers of yesteryear seemed oblivious. Maybe most of them had gardeners to do the tedious work.

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You need not justify your choice of medium; the results will either have your fellow growers envious or smugly smiling. Around the world, fir bark and other barks are still widely utilized. In Europe, the change from peat to inorganic mixes is widespread, yet at Floricultura, ever the leaders, finely milled sphagnum from New Zealand is still the highest percentage substrate in the medium used for plantlets just removed from flasks. Inert materials like Aliflor (artificial) and Scoria (natural) are popular in some parts of the world and ignored in others. Many phalaenopsis in Japan are still finished in sphagnum moss, not least because this gives the grower or florist an opportunity to make up multiple plant pots with ease, whereas, in the United States, coconut fiber has rapidly become the preferred medium for many growers because of its ready availability, competitive pricing and longevity.

If you are not growing phalaenopsis on tree-fern slabs or cork mounts, current cultural knowledge encourages growers to plant them in clear pots so the roots can contribute their photosynthetic output to increased growth and flower quality. Commercial growers have been quick to see the benefits of this process and in just a few years, clear pots have become the norm for growing pot-plant phalaenopsis.

There will always be someone hyping a new container, new growing media or new fertilizers. Given a short test of time, most of these new wonder materials will disappear into oblivion. With the exception of Rockwool (and even it was once head to head with Oasis as the preferred inorganic potting medium), there have been few fundamental changes in media in the past several decades. Osmunda has gone, except for the flat-earth types, but bark, moss and tree-fern fiber are, have been and will likely continue to be used. That's not to say we cannot come up with a better growing medium and growers are ever innovative — but do not hold your breath waiting for the next phenomenon.

**General Guidelines** By all means, make testing and experimentation part of your orchid hobby but start somewhere and work forward in a systematic manner. Change one variable at a time and be patient. Many media grow good plants for six to nine months, but it's in the last few months of the life of a medium that the flaws rapidly appear. Be aware of the dynamic between what additives you blend into your potting mix and what you apply as fertilizer. Understand too, that few, if any, orchids have ever died from too little fertilizer or too little water but countless millions have perished from the reverse.

While this is not an article about fertilizing, I realize with each year how little we really know about nutrition of the major genera of orchids - or maybe how little I know. However, I tend more and more to the philosophy of some experts that a 3-1-2 ratio (N-P-K or nitrogen-phosphate-potash) is probably closest to that of nature and that growing orchid plants will perform well if this regime is followed. More research is needed on flower induction preconditions for the major genera but in North America such research is becoming more popular and we have an interesting decade ahead. Some exciting research activity into orchid growing media probably will unfold over the next few years.

*Note: Andy has been a professional orchid grower and hybridizer since 1973. He is the former owner of Geyserland Orchids in New Zealand and the former Director of Education for the American Orchid Society. This article appeared in the American Orchid Society Orchids magazine, in February 2002 (Vol. 71:2, pp.130-133).*

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These vandas at Kanjana Orchids, which are six months out of flask, are grown in clay pots with no medium around the roots and fertilized with a weak solution weekly. Image by Charles Marden Fitch



Left *Dendrobium phalaenopsis* hybrids, which are grown for cut flowers, are planted in coconut husk chunks at Kanjana Orchids' Rathchaburi range in Thailand