



COFFS ORCHID NEWS DECEMBER 2024 PUBLICATION OF THE COFFS HARBOUR ORCHID SOCIETY

7 Kotuku Street, Coffs Harbour. NSW 2450

Email: chorchidsociety@gmail.com

Web: www.coffsorchidsociety.org.au

EDITORIAL:

Congratulations to the 2024 CHOS Committee for a job well done during the past twelve months. There have been many highlights during the past year including two fabulous orchid shows and a display at a local nursery where the Society could showcase what they do best—grow fabulous orchids.

The year also included very informative monthly meetings, a regular newsletter and a variety of excursions to orchid nurseries, members greenhouses and a variety of local attractions, all of which helped improve our members knowledge of orchid growing and provided opportunities to see the methods used by other orchid growers and professional nurserymen.

A very special thank you to Carole Davis and Frank Pappalardo for their outstanding contributions to the Orchid Society during 2024. Their perseverance and work efforts will surely be missed in the future as they have decided to not seek re-election on the CHOS Committee for 2025.

Welcome to David Rudgley who is stepping into the role of Treasurer for the new Committee. Congratulations to Paige Sinclair on being elected as the CHOS President for 2025. Details and contact information for all members of the 2025 Committee are listed on page 2 of this newsletter.

A very special thank you goes out to Gary Suter for the work he has done over many years in compiling the monthly orchid competition points score and determining the winners of the annual awards. Gary has decided to step down from this important position and we sincerely thank him for his past efforts. Thank you, Gary. Your work has been much appreciated.

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The Orchid Year will culminate with the Annual Presentation and Awards Luncheon to be held at the Pacific Palace Chinese Restaurant on the corner of the Pacific Highway and Elbow Streets Coffs Harbour. This will take the form of a Chinese Banquet from 12 noon on Saturday 7th December, 2024. The Society is subsidising the lunch for members and their partners and so the total charge will be a very reasonable \$25 per person. There are still some places left so if you wish to attend but have not yet added your name to the list then please ring Kerrie Gosling on 0427 515 887 to claim your seat. Everyone attending is requested to pay the Treasurer, David Rudgley, on the day at the restaurant—either cash or credit card is acceptable.

Please come along and celebrate the end of an amazing year and congratulate those who will receive awards on the day. All members are asked to bring along an orchid for the Popular Vote.

oooOOOooo

Thank you to all members for their support of the Society during 2024. Any organisation is only as good as the members who make up its structure and they help in driving the organisation to achieve it's annual goals. The Committee thanks all of our members for their support and participation during the past year and we all look forward to a very productive 2025.

Merry Christmas, Happy Holidays and a very Happy New Year.

CHOS COMMITTEE 2024-2025**CONTACT DETAILS**

PRESIDENT: PAIGE SINCLAIR 0427 591 901 paigesinclair@me.com
VICE PRES: PETER GOUGH 0409 045 645 haccc51@gmail.com
SECRETARY: KERRIE GOSLING 0427 515 887 kerie506@gmail.com
TREASURER: DAVID RUDGLEY 0401 499 952 davidrudgley64@gmail.com
COMMITTEE: CHRIS HATTON 0414 942 298 pchatton@bigpond.com
 PAUL HATTON 0426 978 923 pchatton@bigpond.com
 BOB SOUTHWELL 0417 695 834 bssouthwell@bigpond.com
NEWSLETTER EDITOR: BOB SOUTHWELL (See Above)

SPONSORS**COFFS HARBOUR PRODUCE**

Coffs Harbour Produce is at 26 June Street in Coffs.

They carry a good range of fertilisers, insecticides and fungicides for orchids, as well as general garden needs. Phone 02 6652 2599.

COFFS COAST MAZDA

For new Mazda vehicles, also second-hand vehicles and ALL your servicing needs. Ring for an appointment 02 6652 3122 or visit 211 Pacific Highway, Coffs Harbour
 You won't be disappointed .

DARK STAR ORCHIDS

Dark Star Orchids. 0416 195832 or (02) 65644088.

Hans and Sue run a small nursery west of Bowraville. They specialise in rare, unusual and hard to find species of many orchids particularly Bulbophyllums, Stanhopeas, Coelogynes and lots of other genera. Check out the website.

www.darkstarorchids.com.au

email darkstarorchids@skymesh.com.au

BRUCE HALL

Bruce provides raffle prizes for Autumn and Spring Shows.

OFFICEWORKS

Officeworks carries an excellent range covering all stationery needs, computers/monitors/printers, and associated technology. They sell a wide range of smart phones and watches, plus furniture and workspace solutions. If you are looking for low prices on everyday essentials, it's all there at Home Base, Coffs Harbour. Phone 66 919100 or check out the full range at officeworks.com.au.

ROSELLA ORCHIDS

Spring and Autumn Show Sponsor: Located in South Grafton and can supply a wide range of orchids but specialises in Cattleya and Vanda genera. They also stock a large range of hardware and accessories for orchid growers. Nursery is closed to the general public except by appointment.

CALENDAR, 2024/25

7 Dec— Annual Awards Presentation, Pacific Palace Chinese Restaurant

6 Feb'25—Endemic Orchids in Our Backyard—Neville Anderson Member Plant Sales

6 March—My Orchid Journey—Ray Clement, Tinonee Orchids

3 April—Preparing Orchids for Show Benching—Bob Southwell

26-27 April—CHOS Autumn Show

1 May— Terete Oncidiinae - Bruce Hall

5 June— Orchid Culture Member Plant Sales

3 July—Bulbophyllums —Hans Schaible

7 August—Deflasking - Paige Sinclair and Peter Gough

4 Sept—Tricks and Tips True or False

1-5 Oct AOC Conference Woolgoolga

16 Oct—Plant Auction

Note: The Committee meets on Tuesday following the Monthly Meeting.

**CHOS BANK DETAILS**

BSB No: 533-000

ACCOUNT No: 32817199

CHOS COMMITTEE REPORT

The following is a summary from the CHOS November Committee Meeting conducted on 12th Nov 2024 at "The Workshop".

- ◆ All Committee were present.
- ◆ President Paige welcomed the new Committee members David Rudgley and Bob Southwell.
- ◆ Bank Signatories to include Paige Sinclair, Kerrie Gosling and David Rudgley. To coordinate additional Signatory with our Bank,
- ◆ November AGM and General Meeting went well. Elections went smoothly with Bruce Hall competently acting as the Returning Officer. Guest Speakers on Display Judging were well received and gave very informative sessions.
- ◆ End of Year Awards and Presentation Lunch—7th December. 34 currently on the attendance list. Committee drew up the program for the Presentation Luncheon and allocated duties.
- ◆ Special duties for 2025 were allocated.
- ◆ Discussion of upgrading the CHOS Website during 2025—further discussion to be held during early 2025.
- ◆ Committee is seeking cheaper priced show ribbons and are waiting on quotes from suppliers.
- ◆ Discussion of a suitable plant for the 2025 Plant Growing Competition. Paige to investigate obtaining seedlings of the genus *Tolumnia* (or related genera) as a suitable competition plant.
- ◆ Discussion has continued between CHOS and WDOS about conducting a combined Winter Orchid Display during 2025.
- ◆ Neutrog Fertilizer Company has approached CHOS regarding giving a presentation at a General Meeting during 2025. Suggested dates to be given to Neutrog for their consideration.
- ◆ Confirmation that the 2025 Spring Show will be held on 13—14th September. Set-up on 12th Sept.
- ◆ Confirmed that the Monthly Meeting Orchid Benching Categories will remain unchanged for 2025.
- ◆ Next Committee Meeting will be held at 'The Workshop' on Tuesday 21st January 2025.

NOTE TO SELF:
JUST BECAUSE IT
POPS INTO MY HEAD
DOES **NOT** MEAN IT
SHOULD COME OUT
OF MY MOUTH



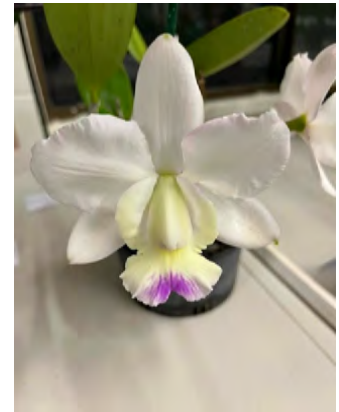
Very Nice Definition of TIME

Time is slow when you wait !
Time is fast when you are late !
Time is deadly when you are sad !
Time is short when you are happy !
Time is endless when you are in pain !
Time is long when you feel bored !
Every time, time is determined by your feelings and your psychological conditions and not by clocks. So have a nice time Always.



Phalaenopsis Infinite Dream (Silesa)

Popular Vote at the CHOS November Meeting was shared by Silesa King and Dick Cooper. Congratulations!



Cattleya Snowblind (Dick)

BENCHING AT CHOS AND NVOS THIS MONTH



Vanda benched by John and Donna Cornale at CHOS Nov meeting



Phalaenopsis No ID benched at CHOS by Rhonda Smith



Phal. Infinite Dream benched by Silesa King at CHOS Nov meeting



Dendrobium Gatton Sunray which won Popular Vote at the NVOS November meeting. Grown and benched by Rhonda Smith. Congratulations on an awesome plant.



BITS AND PIECES



- ◆ Bark and charcoal supplies can be obtained from Paige Sinclair from 4 Jean Street, Coffs Harbour or phone 0427 591 901. Kiwi bark comes in four sizes— No.2: 3 to 8mm; No.3: 8 to 20mm; No.4: 20 to 25mm; No. 5: 25 to 50mm and sell at \$50 per bag.. Supplies of 15mm charcoal (Orchid Char) are also available. These are in 19kg bags and sell at \$45 per bag.
- ◆ Members should note that there is no General Meeting in December and the next meeting will be on February 6th 2025. This is the last newsletter for 2024 and the next publication will be in your mailboxes around the middle of January.
- ◆ Confirmation of CHOS Show Dates for 2025 : Autumn Show : 26th and 27th April—set-up on 25th. Spring Show: 13th and 14th September—set-up on 12th. Please mark these on your calendar.
- ◆ Don't forget the Annual Awards Luncheon to be held at the Pacific Palace Chinese Restaurant on Saturday 7th December between 12noon and 2.30pm. Please bring a flowering orchid for the Popular Vote segment. Ring Kerrie Gosling if you wish to attend. Members and Partners are \$25 each.
- ◆ Lots of discussion has been had about a suitable plant for the 2025 Plant Growing Competition which will commence from March next year. A decision has not yet be made but it is a strong possibility that it may be a member of the *Tolumnia* genus which will probably be a big challenge for most members. More details in the next newsletter.
- ◆ Need assistance or advice with any orchid task? Please consult your allocated Advisor for help. If you are uncertain about the name of your Advisor, then please contact Paige for details.
- ◆ Many growers would have now finished their annual repotting and are sitting back enjoying the fruits of their labour. But if you are like me and still haven't started or have lots more to achieve, then don't panic as there is still plenty of time left to complete the task. Some orchids benefit from repotting every year after flowering (such as Phalaenopsis) but the majority grow well if repotted every two years. Many larger specimens such as some Dendrobiums or Cymbidiums prefer to be left alone until they fill the pot. CHOS has plenty of good quality potting mix available so ring Paige to organise your requirements.
- ◆ Many growers are now incorporating using Calcium Nitrate in their fertilizer programs. This provides orchids with much needed Calcium and also Nitrogen for green growth. You cannot mix Calcium Nitrate with other fertilizers in a solution as it causes precipitation to occur and you end up with a sludge in the bottom of the container. Most growers apply it separately as a spray once per month and the usual rate is 4 grams of solid $\text{Ca}[\text{NO}_3]_2$ to 1 Litre of water. Store the Calcium Nitrate in a sealed container as it easily absorbs moisture if exposed to the air.

CHOS MEMBERSHIP FEES ARE DUE FOR 2025

The annual membership fees are due for payment from the 7th November, 2024 and must be paid by the start of February if you wish to remain a financial member of CHOS for 2025.

Being a financial member entitles you to attend monthly meetings, take part in workshops and orchid excursions and receive a copy of the monthly newsletter. It also provides you with access to an Advisor and to other orchid specialists who can help you with any cultural problems you may have. It means you are affiliated with the OSNSW/AOC and entitled to exhibit in any Australian Orchid Show.

Membership fees are set at a very reasonable \$10 per member or \$15 for family membership.

Please pay Treasurer David at the February meeting or Direct Deposit into the CHOS account (see P.2).

(Printed with permission from the KOS Bulletin, September 2024)

PART TWO: (Continued from the November CHOS Newsletter)

Example 2 – Complex modern Cymbidium hybrid

For this example, we need a slightly different approach. As an example, let us look at a recent Best of the Evening – Cym. Regal Fury ‘Venus’. If you have the licenced database product Orchidwiz, you could find out that there are 12 different species in the background of this hybrid and that it’s breeding involves 130 other registered hybrids going back over 15 generations. That is a long way removed from its ancestor species.

Although I would no longer do this for a modern Cymbidium, mostly because there is such a wealth of accumulated cultural information in growing them, I would like to briefly look at the genetics behind this hybrid.

Of the 12 species in the background of Regal Fury, the species genetic make-up calculates down to 35% Cym insigne, 30% Cym lowianum (a combination of lowianum and an older species named iansonii that is now considered to be lowianum), and 10% Cym eburneum. Those 3 species make up nearly 75% of the gene pool.



Cym. Regal Fury ‘Venus’

Their basic habitat info is :

Lowianum – Myanmar to China and Vietnam, shaded, highland cloud forests, elevations 1200 to 2400m.

Insigne - Thailand, Vietnam, Hainan China, highland cloud forests, terrestrial in shallow, sandy soils, shade of low bushes at elevations of 1000 to 2600 m.

Eburneum – India, to Sth China and Vietnam, highland cloud forests, at elevations around 300 to 2000 m.

Although this info is highly abbreviated it clearly shows that all 3 species are cool growers from cool moist situations, which just happens to coincide with our accumulated cultural knowledge of modern Cymbidiums.

Over many years of highly specialised and honed growing skills (not by me I hasten to add) I understand that we have found that Cymbidiums require a substantial day/night cool change somewhere after Christmas to trigger flowering. Which is one of the reasons Queenslanders find some more difficult to flower than do Sydneysiders.

Anyway. If I were to repot a Cymbidium, this is one type of orchid I would use specific instructions from an experienced Cymbidium grower in my area. I wouldn’t try to innovate or to reinvent the wheel.

Example 3 – a Modern Cattleya type hybrid

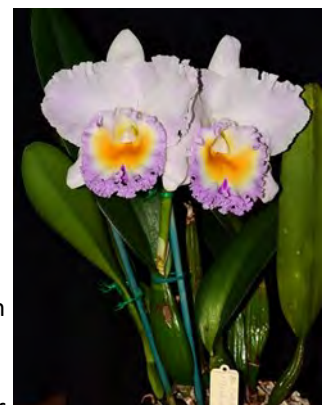
For this example, I have once more chosen a modern hybrid recently benched at our society.

The picture here is Blc (or Rlc) California Girl ‘Orchid Library’.

California Girl is not one of the most recent hybrids, being registered back in 1983, but it is fairly typical of genre. That is, it is big, flossy, well shaped, and has a wonderfully exotic lip to contrast the rest of the flower. It is a mix of the genes of 9 different species in the Cattleya/ Laelia related family and it is one of those magnificent flowers we all love.

There are probably 5 or 6 Cattleya species that could be genetically dominant in different strands of the Cattleya style breeding. In California girl, the two dominant gene species by far are Catt trianae, and Catt mossiae. Let’s look at a brief profile for each.

Catt trianae - comes only from Colombia. It has a single stiff leathery leaf 25-30 cm long x 7 cm wide. They are found along areas near the Magdalena river valley at elevations between 800 m and 1500 m, growing on trees and on rocks. They occur in a rather dry region where numerous cacti and succulent bromeliads also grow. They get rainfall of about 50 to 80 mm most months with a wetter spell in both spring and autumn.



Catt. mossiae – is from Venezuela, 900-1500 m, on trees in the cooler parts of the coastal mountains. It has a single stiff leathery leaf 20 cm tall x 5 cm wide. It has 2 to 4 flowers, larger than trianae, and up to 20 cm natural width. It gets more even rain than trianae but not too much – averaging 100+ mm rainfall Nov. to May and then a significantly dryer period in between.

These are typical big flowered Cattleyas. Both have the typical big leathery leaves designed to get good light and reasonable water access but to be able to tolerate periods of dryness between accesses to water.

These are the standard kind of profiles for most big flowered Cattleyas although there are always exceptions.

They have prolific fat roots that can take up water when it is there to take it but also like to dry out to just moist between waterings. The roots are fat because they have multiple outer layers of dead cells that look white when dry. These cells (the Velamen) act like a sponge to absorb and hold water but when dry they act like insulation to protect the live inner root cells.

As you might imply from that research data, many growers like to grow Cattleyas in relatively large terracotta pots with a decent drain hole in the base. And, they pot them in coarser potting mixes compared to what might apply to finer rooted less ‘cactus’ looking orchids that are more used to being kept evenly moist.

Cattleya growers don’t impose a deliberate wet/dry cycle for most types but the potting structure allows a quicker drain and dry out process than for more moist growing orchids.

----- a little aside here regarding research tools -----

You might be wondering where you can get the information I have used above about the genetic make-up of an orchid hybrid, and the species one might look to for habitat guidance?

The RHS (the Royal Horticultural Society) in the UK officially registers and records all orchid hybrids and maintains the hybrid registration process. They make sure names don’t get duplicated, they record who made each cross, who registered it, and what its parents were. They also manage taxonomic updates to orchid names.

The RHS website has a facility that enables you to do a search of the hybrid register to find orchids by parentage or to do grex name searches.

Parentage Search can be used to identify any grexes from particular seed and pollen parents.

Grex Name Search – (using the registered hybrid name to find parents)

The search tool can be found at : <https://apps.rhs.org.uk/horticulturaldatabase/orchidregister/orchidregister.asp>

The website “Orchid Roots” is an alternative. It also allows you to search an orchid hybrid, gives parentage, and also has a rather big advantage in that it comes with a comprehensive photo database. Just Google or Bing “Orchid Roots”

However, **I still use OrchidWiz**, despite that very sad decision of its founders and owners to retire and close down in 2022 after nearly 20 years of building and improving the product. The RHS site is crude and unwieldy, Orchid Roots is much better, but I don’t know of any software tool that provides genetic analysis given by OrchidWiz, nor the access to the Baker’s wonderful orchid culture sheets and the massive photo database that come with OrchidWiz.

The OrchidWiz website still appears to have a link allowing the download of the 9.1 version of the database but it is a huge file that will take perhaps hours to download **and** you need to purchase the underlying OrchidWiz software to run it. That may also be purchasable via the OrchidWiz website on a flashdrive.

Just this month (Aug/2024) the retired owners have announced a one off special catch up release of an updated Orchidwiz Encyclopedia 20 to incorporate all the latest RHS hybrid registrations, the latest orchid awards, and thousands of additional orchid pictures. Their website has details.

I still live in hope that someone will buy OrchidWiz as a product and take it to the next stage of development. In the meantime I am still using v9.1 while its hybrid record gradually becomes older and out of date from the latest and greatest creations. Nothing is forever.

----- end of research info aside -----

Part B – Health and Appearance

This orchid you are planning to repot, what does it look like healthwise?

I don’t mean does it have a temperature or a high blood pressure, but I guess I am talking about the orchid equivalents thereof. So what does a healthy orchid look like and what are the signs of a sick one?

There are few things I always look at on the subject orchid to judge its condition.

- Is it growing well or is it in trouble?
- Signs of pest infections or damage?
- Signs of Virus
- Root damage or decline
- Leaf colour and turgidity

None of this assessment changes whether the orchid needs repotting but might well change your course of action.

I am not going to move on from here to tell you how to assess virus or pests as there are more specific articles available for those and I am in the process of updating several from past KOS bulletins to have them installed on our website. But at a broader level! I can say that :

If the orchid shows signs of virus it should be destroyed so that it can't be rescued by any less aware grower.

If the orchid has scale or mites or some pest chewing it or eating its roots or shoots, then that problem MUST be addressed before you get on to repotting. Fix the bugs first.

If the orchid is showing signs of bad root damage it will very likely be exhibiting a plant falling over or loose in the pot or with leaves or stems much less turgid than they should be.

And what I mean by turgid in this case is that the leaves and above ground parts should have a stiffness from the healthy water pressure within. An unhealthy orchid will either have insufficient roots to keep the green parts pumped up or be sick in some way that causes the same effect.

Turgidity can be judged by feel and is very important. To some extent, judging healthy turgidity assumes that you already know what a healthy orchid of that type feels like but if you are faced with a 'floppy' textured orchid I am sure you will know it. Just be aware it IS a symptom and watch for it.

A sick or soft textured orchid needs assessment before repotting no matter what the cause of those symptoms. Nearly all orchids grow in specific annual cycles (see discussion on seasonality in the earlier section) and in a lot of cases an orchid WILL NOT MAKE NEW ROOTS until that orchids seasonal cycle gives it the signal.

5. **However, if the orchid is in poor condition due to root rot** you are doomed to trying to fix that problem immediately because it will only get worse and worse. So you need to remove the orchid from its pot as gently and carefully as you can and TRY TO MINIMISE DAMAGE TO EVERY SURVIVING ROOT. When you do repot an orchid THERE WILL BE INEVITABLE ROOT DAMAGE. Don't make the orchid's condition worse than it already is by damaging existing roots. As you extract the medium and the roots, save every root possible in as best condition possible. Cut off dead or rotting parts of the orchid, perhaps give it a soak in Seasol ©, repot in fresh sphagnum moss, and try to nurse your poor orchid through to the seasonal period in which you have usually repotted the orchid. You need to nurse until the plant begins regrowth and try to make that next growth season a healthy one.

If the sick orchid appears to be in healthy potting medium and not suffering from bad roots, and perhaps you have decided that its sick condition is due to a previous lack of understanding of its requirements (perhaps growing in too much or too little light, the wrong watering regime, too much or too little fertiliser, etc) AND you now know what to do, I would suggest you just leave it in its pot as is, and wait to repot at the most appropriate seasonal time for that orchid.

In the above I lightly refer to healthy vs not so healthy So then, **What does Healthy Orchid Growth look like?**



For monopodial orchid like a hybrid *Vanda* (far left) or the *Aerides falcata* – 2nd left - (which don't produce pseudobulbs), we look at whether the leaf growth looks 'turgid' (not soft or wilting in any way), that it has many years leaves still attached and growing **AND** that recent leaves are at least as wide/long as previous leaves. Vandaceous orchids generally only produce 1 or 2 sets of leaves each year (perhaps more in super conditions) so if a *Vanda* is a relatively young plant and has been advancing well for some years then the leaves will hopefully be getting slightly wider, year by year. Just like this leftmost picture of one of Trevor's *Vandas* above.

Vandas grow taller year by year (or longer if they dangle downward) and leaves last many years unless the orchid deteriorates in health. If the orchid is struggling, the leaves may become spotted and damaged, they will sag, look desiccated, and or the older leaves will die and fall off. I judge Trevor's *Vanda* above to be around 5 to 7 years past the point the seedling first became 30 cm wide, which would have been just about big enough to flower. It still has all its leaves and is a picture of health.

For a *Cattleya* (right two pictures, which are 'Sympodials' (which do grow pseudobulbs), we similarly look for strong turgid growing leaves and pseudobulbs, and if possible a progression in size of pseudobulbs and leaves. However, once a *Cattleya* reaches full mature size, it's pseudobulbs and leaves won't get any bigger.

In the first *Cattleya* picture above, I think you can see that the centre pseudobulb is a little bigger than its predecessors and the latest developing growth is heading to be bigger again. In addition all pseudobulbs and leaves are bolt upright, virtually leaping out of the pot. A sign of excellent health.

In the second *Cattleya* picture the growth is so closely packed that the pseudobulb and leaf sizes aren't clear but the leaves and growths are nice and stiff and upright and the new growth is growing rapidly. There is no softness about the leaves or the plant and it is nice and healthy.

However, as *Cattleya* pseudobulbs age they frequently shrink in diameter and become sort of corrugated as in the picture at the right. If the orchid is growing poorly and becoming slightly desiccated through root loss or lack of water through any other means, the corrugations will become more and more pronounced and can press against one another forming almost invisible vertical, mini tunnels along the stem, and often become a harbour point for scale infestation.

Old dried pseudobulbs or deeply corrugated pseudobulbs are a sign of poor health but you must bear in mind that mild corrugations on old pseudobulbs are just part of the lifecycle. The descriptions above can't ever adequately define a line between healthy and otherwise but I hope it at least gives you the idea of what the better side looks like.

Part C – What kind of Orchid is it physically?

This part is about understanding what your eyes and your physical feel of the orchid tell you.

There are around 30,000 identified species of orchids and hundreds of thousands of man-made hybrids. However, with all those orchids there are a number of growing types that are useful for growers to categorise in terms of culture.

The obvious sorts of characteristics that are related to culture are :

Fat, thick roots vs thin roots (fat, open air roots have more layers of outer, dead cells, 'velamen' as insulation)

Stiff leathery leaves versus more grass like leaves. While the stiff leathery ones are easily identified and separated, the more grass like leaves come in a rather large range of variations.

Natural leaf colour. This is tricky because I must stress I am referring to natural leaf colour in nature and not necessarily the colour it is displaying in our artificial culture. Leaf colour is easily affected by the level of light experienced, but also to a lesser extent leaf health. Shade growers tend to have deep green leaves. Bright light growers tend to have grey green to yellow green leaves.

Is it a lowland orchid or a highland orchid?

Monopodial (no pseudobulbs) vs sympodial (has pseudobulbs)

At this point I am faced with a quandary as to how best to go on to explain what I am talking about. As it is all to do with visual and sensual assessment, I was tempted to try to illustrate by hundreds of pictures of good vs bad, type vs type etc. but I just don't have the store of the images that would be necessary. Even the internet image store fails me as people tend to not take pictures of their failing orchids or even of just their leaves.

So you will have to put up with 'some' pictures, but less than desired, and more words.

Leaf Styles - Leaf shape and style doesn't tell you everything about an orchid but they are an important indicator of adaption to an environmental growing style. I can't discuss every niche of orchid evolution because I only understand a small part of it

but for the purpose of orchid culture for the average orchid grower I am hoping what I can tell you will help you understand your orchids.

I am going to examine just three distinct orchid leaf types that I regard as representing evolutionary variations to the way leaves are used but I must stress that even within what I am calling a leaf style there are countless variations.

The two widest extremes in orchid leaves are – the leathery cactus like leaves versus the broad soft leaves. These leaf styles are not necessarily aligned with orchid families or genera. Within each of the popular orchid families such as Dendrobiinae, Oncidiinae, Laeliinae, and others you will find example of both stiff leathery leaves and soft bendy grass like leaves. But what is common is that the type of leaf reflects the type of habitat to which that species has evolved and is an indicator of it's growing requirements.



Stiff, succulent leathery leaves



Most Oncidium family species have soft flexible leaves, as do most Dendrobiums but as you can see from these examples - not all are like that. Even our Australian Cym. canaliculatum shows that orchids like a Cymbidiums can be stiff leathery leaf types.

It is perhaps surprising, that while not exactly leathery, even Phalaenopsis have thick succulent leaves that when healthy will snap rather than bend very far.



It isn't hard to work out that orchids with stiff leathery leaves have the ability to tolerate dryer climates and less frequent access to water. Fat stiff roots very often go hand in hand with thick stiff leaves for the same reasons. The most obvious example are the Cattleya family which all seem to be Water Preservers or Drought Endurers as Sue Bottom labels them in her article "Adaptions to the Epiphytic Lifestyle".

Nearly all Cattleyas follow the pattern of stiff leaves and pseudobulbs and fat roots, and a large percentage do so because their natural home is high in the canopy of trees or they reside in lower rainfall areas where the same pattern is suited.

With other genera like Dendrobium, mostly have softer persisting leaves, but a smaller percentage (like the example pictures of Den. Leonis and Den striolatum above) have developed stiff succulent leaves but the environmental reasons are much less clear. Den leonis for example does not come from dry conditions. It is mostly a lowland orchid in areas of plentiful and regular rainfall, just to illustrate that nature doesn't let you make easy assumptions.

What I might say though is that if your orchid has thick succulent leaves I would want to find out where it comes from and what it is used to before I decided what to do with it. **At the opposite end of the scale** of physical attributes, are **the broad softer leaf orchids** like the Calanthes, Phaius, and some of the South American species like Lycaste.



Calanthe Mascuca



Calanthe triplicata in situ



Lycaste (or Ida) longipetala in situ



Bletilla striata

All the examples above are obviously orchids that grow in or on the ground rather than being epiphytes. In other words most are terrestrial and not members of the Epiphytes that are the true subject of this series. But I use them here to show the relationship between leaf shape and texture and growing habitat. These orchids grow where there is more or less a constant supply of water, low light and high humidity because they are on the forest floor under the canopy of trees, but also subject to wind that can blow them around. They have large leaf area but are pleated in design with strong parallel ribs running from the base to the tip to strengthen them. If the wind gets too much they can shred (as seen in the Lycaste) without losing the leaf. The leaves are designed for their purpose where the plant expects to grow. They are probably an evolutionary development away from my last example type – the grassy leaf orchids.

And so, finally, as a last example, here are some orchids with more grass like leaves.



Onc. Sotoanum



Onc. Cheirophorum



Mltps Her Alexander



Max. fletcheriana



Onc. sphacelatum

Grassy leaves don't tell you the whole story of their environment but they are another indicator and they come in a huge range of variations. I am only guessing but I like to imagine that this style of leaf are more primitive, more like the more ancient terrestrial orchid leaves. In other words, closer to the leaves on other plants that grow in soil, sometimes in high light conditions but in competition with other ground-dwelling plants growing around them. Sometimes this style of growth encourages longer thinner leaves that get good light absorption (like grasses) but reasonably flexible leaves that are able to be moved around vigorously in the wind.

That may have been where they started but they have evolved into almost every epiphytic niche by making what may seem at first to be rather small changes in structure.

Some, like **Onc sotoanum and chierophorum above**, still have quite soft flexible leaves. These are the parents of the famous hybrid Oncidium Twinkle and are in fact quite close cousins, both being in Oncidium section Rostratum. Like any epiphyte they can tolerate brief dryer spells and both appreciate a slightly dryer rest in winter, they come from areas with high humidity and good rainfall nearly all year. They both have relatively fine (thin) roots for an Oncidium and I believe both their fine roots and their flexible leaves indicate more or less constant access to water at the roots. Both are cool growers but cheirophorum is generally from lower elevations so not too cold.

The **third picture above is a Miltoniopsis hybrid** (the pansy orchids) and these have magnificent flowers. They are very popular, but touchy to grow. Some people grow them with ease, others struggle, and I am one of the latter. The Miltoniopsis species mostly come from Colombia in the cloud forests of the Andes. The leaves are a sort of greyish green, long, pointy tipped, and very flexible. A healthy, turgid plant has leaves standing straight up but plants are more frequently seen with floppy leaves, indicating to me that they easily lose water and need regular, moist conditions with good humidity. If the plant starts to struggle the leaves will show it very quickly.

The **fourth orchid above is Maxillaria fletcheriana**. - This one grows as either an epiphyte or a terrestrial on steep embankments in extremely wet montane forest, reportedly in Peru and Bolivia. It has been found up to 2800 m altitude but it occurs

mostly much lower. More like 1000-1500 m. The leaves are 'grass' like but are broader to catch more light, and not as long. The Maxillarias are a curious group that usually have just a single flower on each inflorescence, like the Lycastes to which they are related, but they may produce many simultaneous flower stems and the flowers can be very attractive.

The leaf form in fletcheriana is again consistent with its habitat. Lots of short broad leaves to catch the light and do the factory work and little care taken about the leaves hitting a drought. Ie cool, moist, regularly wet conditions. My choice as a potting medium would be a mix of something like 25% medium bark, 50% 10 mm bark, the rest perlite and crumbled styrene foam. In other words a well draining but moisture retentive mix.

And lastly, **no. 5 is *Oncidium sphacelatum*** which obviously also has long grassy leaves but what you can't tell from the picture is that this is a bright light orchid. It comes from Mexico and parts of Central America at elevation up to only 1000 m. The leaves can be 30 to 60 cm long and up to 3 cm wide and that is huge for an orchid. And although they look soft and grassy, they have developed a much thicker lamina (skin) that helps them tolerate dryer harsher conditions.

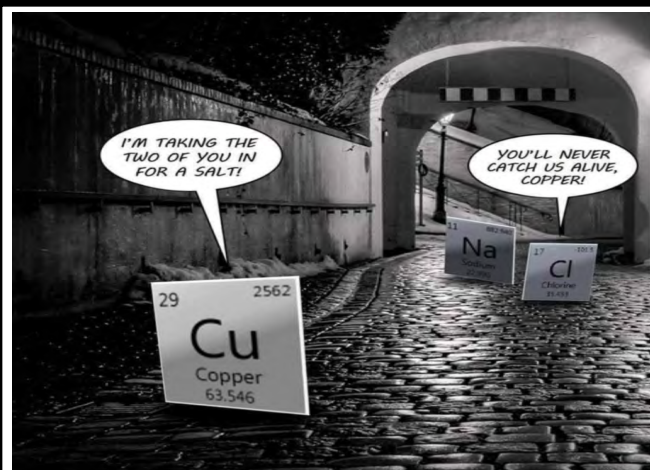
In their habitat they get good rain starting December (by our southern hemisphere season table) and going right through to the end of autumn (May) (the growing period), then a huge drop down to a much dryer 6 months (the resting period or not growing very much period). Perhaps surprising to some, despite it being a tropical region and low elevation grower, *Onc sphacelatum* is regarded as a cold grower in Sydney Australia. It seems to tolerate quite low temperatures in winter, probably because it is barely growing at all during that period anyway.

To tolerate a pattern like that these leaves must be much more drought tolerant than the other 4 examples. Next time you see an *Onc. sphacelatum*, or its hybrid 'Onc. Sydney', which by the way, both have giant Christmas tree shape flower spikes of hundreds of 3cm yellow and red/brown flowers, check out the leaf texture and stiffness. You might be surprised at the way its leaves feel.

Detective Training Summary : I guess I would be rather over-optimistic if I expected that this small series could turn you all into orchid potting detectives but I am hoping it could be the beginning of a process for each reader into becoming one.

Look at your orchids through new and better understanding eyes and see what the plant is telling you before to try to figure out what you are going to do next. I think it was the famous Julius Sumner Miller who once said each thing is specifically designed for its purpose. When you see the physical characteristics of that orchid in front of you, ask yourself why it looks the way it does and find out about its natural environment. The best way to becoming a good orchid grower is to seek understanding, and in cultivating orchids, work with what evolution has created.

Jim Brydie



10 REASONS WHY ENGLISH IS WEIRD

- 1) The bandage was wound around the wound.
- 2) The farm was used to produce produce.
- 3) The dump was so full that it had to refuse more refuse.
- 4) We must polish the Polish furniture.
- 5) He could lead if he would get the lead out.
- 6) The soldier decided to desert his dessert in the desert.
- 7) Since there is no time like the present, he thought it was time to present the present.
- 8) A bass was painted on the head of the bass drum.
- 9) When shot at, the dove dove into the bushes.
- 10) I did not object to the object.