



THE MONTHLY BULLETIN OF THE KU-RING-GAI ORCHID SOCIETY INC.

(Established in 1947)

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16th September 2024 Volume 65 No. 9

Annual Membership : **\$15 single, \$18 family**

Patrons - Pauline and Trevor Onslow

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Secretary : Jenny Richardson

Committee Herb Schoch (Community outreach, Sales Table)

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Committee : **New committee members are required**

Vice President : tba

Committee : **Please put your hand up to help**

Editor (and stand in C. member) Jim Brydie

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Next Meeting : **Mon 16th September 2024**

Venue : *The West Lindfield Community Hall, corner of Bradfield Rd and Moore Avenue, West Lindfield.*

COVID remains in the community. **In consideration of others, PLEASE stay home if you are not feeling well.** We prefer all meeting attendees to be Covid vaccinated, masks are optional.

Please note : For insurance purposes, you now need to **SIGN** the **ATTENDANCE SHEETS** at the **front door on arrival**. Please sign against your name rather than just using a tick.

The hall is open from 6.30pm This is initially to set up the hall (please help). Benching can begin from 7 pm but please no benching until all the class dividers are in place. Give the set up team time to get everything organized.

Our Culture Class this month **will be Jim Brydie** again. We will try a **mini plant doctor session**. Its tricky without the old culture class room so we will arrange the front chairs on the right so attendees can participate more closely to what is being shown and done. Members should bring in problem plants but be aware I will pick just a few to use as the discussion. AND be prepared that I will likely want to tip the orchid out into a tray to see what is going on in the pot.

The sales table will be open as usual but as announced previously, please respect the **“Sales Table Open / Sales Table Close” sign** and work with the sales table managers.

The Supper Break – The society supplies the tea, coffee, milk, sugar etc, **but members are asked to bring along a contribution for the supper table** - cake, slice, or biscuits, etc. **Please bring something to add.**

AND - please everyone, bring your own mug or cup for tea or coffee.

Our Supper Volunteers are Lisa Harris and Nancy Yao. Thank you for helping ladies.

NOTE - Supper is not self-serve, PLEASE DON'T SERVE YOURSELF - helpers are used to minimise handling

After the tea break, our **Guest Speakers** will be several of our more experienced growers selecting plants from the show benches to talk about something interesting about them, something pleasing, or that they have learned.

I have participated at several societies in impromptu sessions like these and they always offer an amazing insight into some lovely and/or unusual orchids. An informal format is intended to be a bit of fun and above all an interesting talk.

Best of The Evening – Novice - Den unknown grown by **Mary Matthews**



A very nice white form of one of our Australian native Dendrobiums. It had two spikes on the latest pseudobulb. One with 5 or 6 flowers, the other a taller 25cm spike with about 14 flowers. The 2 to 3 cm flowers were just starting to open sequentially from the bottom up. It was at an early stage with just the first 5 or so fully open. Mary's orchid was growing well and I imagine that in coming years it is going to produce many more flowers.

The flowers are very reminiscent of Dendrobium kingianum which usually has pink flowers but there are also many white forms like this one. But it could just as well be a hybrid. The southerly form of kingianum occur right down to about Newcastle just above Sydney but these usually have short spikes and fewer flowers. Varieties from northern NSW up have the longer spikes and make lovely garden landscaping orchids.

Congratulations Mary. It looks like you have it doing well. I hope you get lots of flowers from it in coming years.

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Society News (if anyone has a news item, please phone Jim on 9476 3383, or email at jimbrydie@aussiebroadband.com.au)
President Dennys' Desk – Our August meeting had 43 people in attendance, including 7 visitors. The setup took some time to happen as very tired, but committed people filed in with lovely plants to bench and generous contributions for our amazing supper. It wasn't too cold outside, but we still had 13 apologies. This is understandable since our meeting is first night back after the end of the great effort that all members across the 4 societies put into making the St. Ives Orchid Fair (SIOF) happen yet again. **Jim** ran an info-rich culture class which was helpful since my shrunken pseudobulbs and wrinkly leaves have always been a problem for me but now I realise I don't water some of my orchids enough. Also, thank you **Chris** for your helpful talk on soft cane dendrobiums. Now being more informed, I think I will have some nice flowers from my soft canes this year. Thank you, **Di** and **Julie**, for working so well to give us an enjoyable supper, it really was a tasty affair. I also thank **Mary** for offering to sell the raffle tickets. Special thanks go to **Ron Howlett** for his generous donation of 5 orchids for the society's use. One of these went into the raffle and the others were snapped up on the sales table. Lastly, thank you **Adrian** for the donation of the nice Cymbid for the raffle. We were out well before time so thank you to all those who helped pack up in speedy fashion.

St. Ives Orchid Fair – The SIOF went well again. Our display came 2nd behind NSOS but not by much. The standard of plants was amazingly good, and all the displays were excellent, which is why I think the points spread was very narrow. There were some lovely developments in the displays, and I personally think MWOS' new setup



worked well for them. I congratulate **Gowan Stewart** for yet another wonderful, champion effort. One day we will manage to get **Gowan** to come and give us some tips. **Lina** and the team did a fantastic display with great care given to placement of the exactly 80 plants and excellent greenery offered by our members for the display. **Janine** also made new black socks for the pots in a sustained effort which helped give extra depth in the small spaces.

So many members helped, and I thank all of you for your efforts. All KOS members should be proud of the commitment made to make the display look as wonderful as it did. I also had the great pleasure of presenting **Celeste** and **Ethan** with their new KOS member badges in

the SIOF Display Hall – it was a fitting place for such a memorable event.

A walk in Bunyip Forest – I live near Rofe Park in Hornsby Heights and on the first day of spring I went for a walk in Bunyip Forest down behind the park. My boys named it Bunyip Forest during their boyhood years. Anyway, in 30+ years I have never seen any terrestrial orchids flowering in the forest, I must have just missed them I guess, but this year I managed to spot a blue sun orchid (*Thelymitra*) flowering and on looking more closely there may be many others on the way. It was so good to find it, but it was more by luck than expeditionary skill. It didn't have spots but that said, I don't know which one of the species it is. Someone may be able to help identify it.

Britain's rarest wild orchid – Orchids always seem to be in the news somewhere in the world. This is a great story since after a 15-year hunt, Richard Bate (BSBI) rediscovered the Ghost Orchid (*Epipogium aphyllum*) flowering in England. It had not been seen since 2009 and prior to that in the 1980's. The link follows:

<https://www.positive.news/environment/britains-rarest-wild-orchid-discovered-again-after-15-years-of-searching/>



Parking at our Meeting Hall – Please remember the bus service is still active during our meetings. So, please be careful to ensure you do not park in the bus stop zone. There is more (shopping center) parking nearly opposite the hall. (see pictures and text below)

Member's plants sales – Members who have plants for sale at our meetings please make sure they are in good order for sale. Just bring them in and put them on the 3rd table with a yellow label with the price and your name. However, it should be remembered that sales cannot occur **until the sales table is OPEN**.

Attendance – Please remember to wear your badges and sign in on the attendance sheets. Just find your name and sign to help keep our insurance risk as low as possible. Visitors should add their name in the visitor's box provided on the last sheet.

Wearing masks – COVID is still around. So, please feel free to continue to wear a mask at our meetings and hand disinfectants will be available.

Members' welfare – Personal challenges occur all the time, so please remember, if you need to speak to someone immediately then you are most welcome to contact me at any time, 24/7 on 043 88 77 689.

* The midget fortune teller who escaped from prison, was reported as a small medium at large

* A hole has been found in the wall at the nudist camp. Police are looking into it.

* I thought I saw an eye doctor on an Alaskan island but it just turned out to be an optical Aleutian.

Other Society News

1. The Bus Stop Outside the Hall – in case you weren't aware, there is a bus stop on Bradfield Rd virtually outside the front door of our meeting hall. Buses do run during the evening of our meetings so the bus zone is NO PARKING on our meeting nights. If you park in the bus zone you are very likely to be fined – DON'T DO IT.

The bus zone runs from (on the left) the curved top sign that identifies the hall and kindergarten – right down to the tree at the left side of the hall entrance. There are two large trees outside the hall and the right hand bus stop sign is beside the leftmost of the two big trees. **DONT PARK IN THE BUS ZONE – IT IS ACTIVE AT NIGHT**



2. Our Club's AGM in October - Dear members. This is your official notice of our Annual General Meeting on 21st October 2024, at the West Lindfield Community Hall, West Lindfield, commencing at 8pm.. At the AGM we elect a committee to run the society for the following year, and this year we are approaching a crisis.

PLEASE READ THE FOLLOWING CAREFULLY.

For personal reasons, our current President Dennys can't re-stand for President and, try as we might, so far, we haven't been able to find someone to stand for the role. In addition our present committee consists of just FIVE members plus myself as a temporary appointment to make a quorum while one of the other committee members was medically unable to attend. This committee has been highly effective but **in my opinion that number is inadequate.**

This is a serious problem. Although a committee can be elected without a President, and the elected committee can temporarily cover that deficiency, ***Government rules insist that a club that can't find a President within a short period must close down.***

A Personal Opinion – based on my continuous experience on orchid society committees for 40+ years.

Orchid society committees serve several simultaneous purposes. Some roles such as President require at least some level of experience in public speaking and also in some kind of management. The president, as the team leader, chairs meetings, runs an agenda, AND must work with the other committee individuals to coordinate their assigned tasks to achieve an overall outcome and direction for the club.

However, the committee is also a place of development for participants. For myself it was a place of learning about orchids, about people, and about life. Yes I had to carry out various tasks assigned to me so I did some work, but it was not onerous and I enjoyed being part of a team of more experienced people and growers. People with much more life experience than I, and with skills in a very wide range of work experiences. I learned and I grew.

Participation in a social club committee builds a team who get to know one another and who help one another grow as individuals. Every person you meet in life is smarter or better at something than you are but you can't gain from that unless you are open to it and unless you make the effort to get to know the people around you.

When members first come into the committee, some are but most aren't, yet ready to take on a senior role like President, Secretary or Treasurer. Occasionally we get lucky and find someone with work experiences that have readied them to do those things but many more new committee members take the path I followed and grow a little before taking on such tasks.

For Those Very Reasons I would like to see our committee commence this next year with a committee of more like 10 persons.

Nothing is forever. Peoples lives change around them and circumstances may arise such that they may not continue on committee. That is understood but please make the effort and volunteer when you can. The make up of the committee continually changes but there is usually a core that stays longer. Such is life. There will always be a constant rotation, and so, to ensure maintenance of a solid team we need more than minimim numbers on the committee.

I am going to stand for committee again at this coming AGM, if members want me, but I am now 79 and we need more of you for the future. You don't need to be a trained accountant or manager or Master of Ceremonies, a doctor or a lawyer. Just join the team, share some of the workload, and perhaps in time, if your circumstances allow – take on a senior role for a while.

STEP ONE IS TO GET ON THE TEAM. YOU ARE NEEDED OR WE WILL FALL

3. Another Pre Notice - October is also Members Orchid Auction night.

Each single membership is invited to bring 2 'lots' for auction, family memberships may bring 3. A 'lot' may be a single orchid or a bundle of more than one to be sold together. You may place a reserve price on each lot you sell but whatever it sells for, the society takes 15% commission.

Now is the time to begin choosing your plants to sell and grooming them. They need to be clean, and pest and disease free. Better looking orchids obviously sell better. Get planning. The better info you provide, the better it sells.

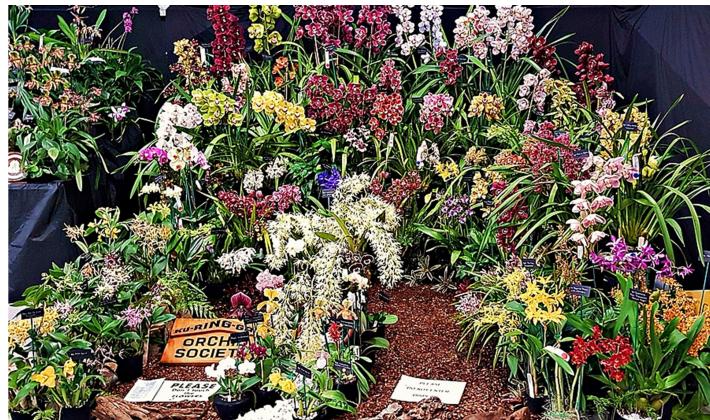
Coming events

- Thur 12 – Sat 14 Sept, NSOS, St Ives shopping centre
- Fri 20 – Sun 22 Sept, MWOS, Belrose super centre
- Sat 21, Sun 22 September Plant Lovers Fair at Kariong.

The Ku-Ring-gai Orchid Society Display at St Ives

Second in the display section again this year but what a display and just look at all those gorgeous Cymbidiums. Our

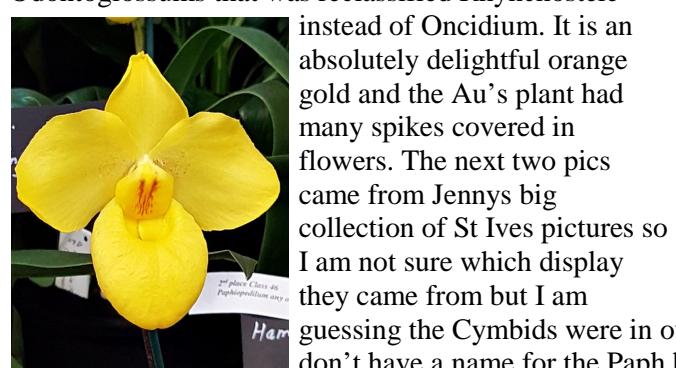
growers gave us a horde of wonderful Cymbidiums to work with, and Lina and her team did us proud. The big white Den. speciosum in the middle was Dennys' and from what I hear he was watching out for beetle attack every day leading up to the display.



The standard of competition this year was exceptionally high and there was only a point or so between 2nd and 5th so the pressure is rising from our fellow societies like Eastwood, Manly, ANOS Warringah, and others.

There were some fabulous orchids in the various displays. I only have pictures of a few and perhaps not the very best but taking pictures is such a personal

appeal thing so I hope the champion growers will forgive me for missing what may have been the obvious best to many. The one in the middle is one of Paul and Loretta Au's babies and it ended up in the front right corner of our display. It was labelled Onc. Molten but the genus is more



correctly Oncostele as one of its background parents is Rhynchostele uro-skinneri which was one of the few Odontoglossums that was reclassified Rhynchostele instead of Oncidium. It is an absolutely delightful orange gold and the Au's plant had many spikes covered in flowers. The next two pics came from Jennys big collection of St Ives pictures so I am not sure which display they came from but I am

guessing the Cymbids were in ours and both lovely flowers. I don't have a name for the Paph but I am guessing it is the



wonderful Paph. armeniacum or perhaps one of its primary hybrids. You just don't see many deep yellow Paphs like that. But the point is the quality of all was exceptionally high. Many fantastic orchids missed prizes and recognition because just so many were top class.

I didn't get to the vendors hall this year but I am told the vendors did good trade and buyers and sellers were happy. Congratulations to all the organisers, the volunteers, and participants. Let's hope we can continue the trend next year.

Best of the Evening Species – Rhynchostylis gigantea

- grown by *Garrie and Lesley Bromley*

The Bromleys also got Best of Evening with this stunner in August 2022 but that time it only had one spike of flowers. It has three this time so they have brought it on nicely.

Rhynchostylis is a group of just 4 monopodial species closely related to Vanda. Rhy. gigantea is a lowland orchid found in quite a few countries: east-west from Burma to Laos and Cambodia, and north-south from China to Indonesia and Borneo. It is a large, heavy textured plant with thick broad leaves (5 cm or more wide). A mature overall plant can measure around 60 cm wide x 50 to 80 cm tall. This is a big



orchid. It has a densely flowered inflorescence about 30cm long but can carry up to 50, 3cm wide flowers. An impressive sight.

Most giganteas have white petals and sepals lightly speckled with burgundy but there is considerable variability in the depth of colour. Garrie and Lesley's plant is a relatively dark form but there are some that are just about full magenta and some pure white. There is even one in an almost peach colour.

This is a warm, moist grower which I have never grown successfully but I always admire the sight of a well grown older Rhynchostylis with multiple spikes. I think there were a couple at St Ives this year, and no doubt this was one. A lovely orchid Garrie and Lesley. You sure grow all your orchids beautifully.

Best of the Evening Hybrid – Cym. Blushing 'Perfection' - grown by Geoff Le Marne



Aren't we seeing some delicious Cymbidiums at recent meetings. Beautifully shaped and wonderfully distinct colours but also samples of the more exotic types like Death Wish. You current growers are putting the previous generation to shame.

Cym Blushing is one of Royale Orchids creations and was registered in 2012. There are pink cultivars but this white one is a delight and the pink blush inside the lip and around its front edge is so attractive.

I don't know whether all these ancestor names will mean much to many but the parents are Joan's Charisma and Spring Flame but it seems to be the Spring Flame side that is providing the genes.

Joan's Charisma is an attractive and nicely shaped white bred in 1995 but the lip is below modern standards and Joans Charisma was an unusual, almost experimental cross mixing an old 1943 white (Joan of Arc) with Cronulla which is a green and part

of a line of greens developed by Alvin Bryant.

The other side of Blushing (ie Spring Flame) seems to be where the higher standard whites derive as you can see from the picture of Spring Flame 'Blushing' at the right. Spring Flame's background is complex because it mixes several different lines. Reds like Khan's Flame, and greens like Cronulla but also an outstanding white called Masao's Toya from 1981 (far right).

The background of all the various parentage makes it rather difficult to see what objective was targeted but they certainly created some really lovely Cymbidiums along the way.

Congratulations again Geoff, you bring some delightful orchids in to share with us. Congratulations on another Best of the Evening. It is such a privilege to have growers like yourself passing on your skill and learning.



Some other lovelies from the August Meeting



Restrepia contorta - Fred Gorginian



Onc. (previously a Wilsonara) Pacific Panache 'Dorothy Jean' – Paul and Lorretta





Den Avril's Gold - A Mobbs



Catt. Tokyo Life



Paph. Shin Ye Heart x Hung Shen Dream



Rlc. Hsinying Aloha 'C.H. Super'

Growing Orchids 5 – The Orchid Potting Detective by Jim Brydie

Your Orchid needs repotting. Where do you start?

Well before you try to physically assess what is in front of you, you need to know what it is. If it has a label make sure you read it and then do some research on the kind of orchid you are about to work on. If it doesn't have a label, ask someone who knows. - Is it a Cattleya, a Cymbidium? a Coelogyne? or whatever? AND, not just that, but what kind within that kind. If it is a Cymbidium, is it a standard modern hybrid to which all general Cymbidium growing instructions would apply, or is it a special kind that needs a tailored approach?

If, for example, it is a Coelogyne, the situation is even more complex. There are about 205 species of Coelogyne from a VERY wide range of habitats and climates. There are quite a few hybrids as well but curiously, this is a genus grown mostly for characteristics of some of its species and this includes some really lovely, easily grown orchids.

The point is that unless you already know all about the kind of orchid in front of you, you had better find out before you start playing with it.

Part A - Research

There is no way I can practically talk about how to research EVERY kind of orchid so I am going to explore a process using just 3 examples and I hope you can extrapolate from there.

Example 1 – the label says 'Coelogyne cristata'

There are books and many online information sources. One such internet resource is the ***online Orchid Species Photo Encyclopedia (IOSPE)***. For the genus Coelogyne it tells us : (abbreviated)

“Coelogyne - A most interesting genus of 205 species that is found in all four climes, hot, warm, cool and cold, and in most of Asia east of India and on into Indonesia and Fiji.

Great care must be given in knowing what climate a species comes from as they may not tolerate your conditions. Warm growing species like pandurata and speciosa require no rest while colder growing species need a dry rest in the winter. They can have close or far spaced pseudobulbs along the rhizome with 1 or 2 plicate (folded) leaves, and inflorescences that arise from the apex of the pseudobulb or from the apex of a new growth. I find that wire baskets accommodate these potentially large plants best. My mature pandurata is in a 40 cm basket and grew out of it in 1 year! The trilobed lip has a spreading midlobe and longitudinal keels either toothed or papilose (hairy). The long, winged column has a large rostellum (beak, or nose) curving over the hollow stigma. There are 4 pollinia (JB: waxy masses of pollen) cohering in pairs to a single, two lobed, granular appendage.”

There are quite a few botanical terms in all of that but don't be put off. Such is the life of an orchid fancier. Many of those terms will eventually become part of your vocabulary and each term used can easily be googled for an explanation, but despite the technicalities, you have to admit that even in a first reading of that little introduction you certainly learned something about Coelogynes.

However, just having a little overview of the genus doesn't tell you enough. The overview itself already warns that you need to know which Coelogyne you are dealing with, and the same website goes much further. Following the

genus overview, the website goes on to list nearly each species in the genus, to describe it and provides a picture. It doesn't go so far as to tell you how to grow it (not usually anyway) but it gives you the information to figure it out.

For Coelogyne cristata is offers :

“Flower Size up to 10 cm. - Found in the western Himalayas, eastern Himalayas, Assam, Nepal, Bhutan, Sikkim and Java in lower to upper montane forests at altitudes of 1500 to 2600 meters and is a small to medium sized, cool to cold growing epiphyte and occasional lithophyte with oblong, smooth, clustered to well spaced pseudobulbs carrying 2, apical, plicate, 3 to 10 nerved, narrowly lanceolate, sessile, acute, slightly undulate leaves that blooms from mid-winter till spring on a terminal, pendulous to semi-erect, 6 to 12" [15 to 30 cm] long,



Coelogyne cristata
(from IOSPE for
'inflorescence')

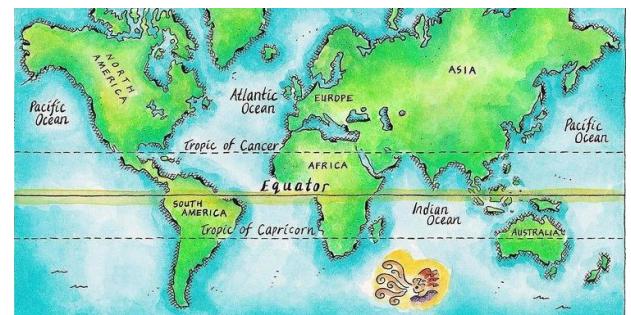
racemose, 3 to 10 flowered inflorescence with persistent bracts arising basally on a mature growth and carrying fragrant banana to candy scented flowers.

They have ovoid pseudobulbs well-spaced on a visible rhizome with two narrowly lanceolate, flexible leaves. In the wild they have year round fog and mist and a very bright winter and grow on mossy trees or on exposed rock outcrops."

So what can we learn from all that?

First I would like to talk about the altitude (sometimes referred to as elevation) at which your orchid occurs in nature. There is obviously a relationship between how high an altitude an orchid is found in nature, and that orchid's tolerance to cooler temperatures. But it is not a direct mathematical relationship and other factors come into play.

Now bear in mind that not all, but at least the vast majority of epiphytic orchids come only from the tropic zones on planet



earth. That is, between the tropics of Capricorn and Cancer, and from the rough map above you can see that *Coel. cristata* does come from that zone. Many years ago I began to try to tabulate the relationship between altitude/elevation above sea level at which a species can be found in nature, and its tolerance to temperature in our backyard orchid habitats. I found that there was clearly a usefully deployable relationship but that it wasn't equal for all orchids and all types. I developed the following table as something that I could apply in 90% of cases so long as I played it on the safe side with any new, unknown to me, or especially valuable orchid.

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 non tropical and will obviously grow cooler.

Max elev. species found naturally hot, warm or cool?

Sea level to 800m	usually hot
900m to 1400m	warm to intermediate
1500m to 2300m	intermediate to cold
2400m or above **	cold

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

Using the table above and the IOSPE data for *Coelogyne cristata*, I infer that *Coel. cristata* will easily tolerate Sydney's winter temperature unless temperatures are extreme in your particular area. For example, I can't infer tolerance to frost conditions.

The habitat information for *cristata* also tells us that they get year round fog and mist and frequently grow with their roots in moss. This suggests it prefers a moist root environment. One that never completely dries out.

These are good clues for choosing the nature of the potting medium and container required.

One last thing however. The minimum temperature that your orchid will tolerate during winter isn't your only consideration as to whether you might be able to grow an orchid.

The orchid you wish to grow may survive 5°C without physical damage but it may also be an orchid whose growing seasons really require much higher temperatures. You may find that as temperatures reduce and day length shortens, the orchid begins to slow down its growth much earlier than it would naturally. When it stops growing it goes into a kind of suspended animation long before you get down to the minimum temperature you want it to endure. It isn't being physically damaged by the cold but nor is it getting the stored energy it needs from one season to flower and grow strongly the next season. A *Vanda* looking for a minimum 12°C or higher will make smaller or less leaves. A warm growing sympodial orchid makes smaller or less robust pseudobulbs. Neither will flower strongly if at all.

Secondly, I want to talk about seasonality.

For *Coelogyne cristata*, in addition to IOSPE descriptions info above, another tool - Orchidwiz provides some seasonal statistics from the Charles and Margaret Baker's cultivation sheets. For *cristata* these are based on a weather station in India in part of *cristata*'s natural habitat and shows the typical monsoonal season pattern for that part of the world. That is, they predict a very distinct seasonal variation in monthly rainfall.

They show heavy rain November through March (300mm Nov, 560mm Dec, 880mm Jan, 650 Feb, 540 Mar,) followed by a sharp dry pattern April through October (142mm, 13mm, 5mm, 8mm, 18mm, 33mm, 54mm).

The months mentioned are the southern hemisphere equivalents, and this is virtually the same pattern we see for softcane *Dendrobiums* such as *Dendrobium nobile*. These are late spring onward monsoonal rain areas.

I have not grown *Coelogyne cristata* to any great extent but I have grown softcane *Dendrobiums* and closely observed their growth, flowering, and rest periods. For softcanes, the flowering process begins by the production of flower buds at the start of spring, well before the annual rains would arrive in their natural habitat. The flowers open in October in Australia and make a glorious display for several weeks. While flowers are in bloom or shortly after, we see new stem shoots begin at the base of last year's canes (pseudobulbs) but new root growth does not begin until that shoot gets to

8 or 10 cm tall in perhaps mid Nov.

We always suggest repotting those softcanes that need repotting just before the new roots start. The rationale being that if they are repotted then, the new roots will invade and fill the fresh pot quickly during December and January in conjunction with the rapid development of new leafy canes. Growth rates will be maximised.

We aren't telling the orchid to grow by repotting just then. It is just doing what it has evolved to do, to take advantage of annual monsoonal rain periods. We growers are just trying to do what we do in tune with the orchids genetically programmed cycle.

As *Coelogyne cristata* seems to follow almost the same seasonal cycle – flowering in late winter early spring, BEFORE its expected annual rain season, I suspect that we should follow almost the same repotting advice that is applied to softcanes. I expect that new growths should start after the flowering and that repotting should be tuned to take place just before that process gets really underway.

NOTE : I am sure you will understand that available internet descriptions for each species vary substantially in content and extent, and you won't get the depth of info above for every species. But there are other places to look and if you have one of that type of orchid already, you have the incentive and the responsibility to find out about it.

Where does it come from? What kind of habitat does it occupy in nature. What seasonal information is available? Why not go to the trouble of finding out. The information is all there 'somewhere'.

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 insignie*, 30% *Cym lowianaum* (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 drier 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.
 1. Parentage Search can be used to identify any grexes from particular seed and pollen parents.
 2. 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.

1. Is it growing well or is it in trouble?
2. Signs of pest infections or damage?

3. Signs of Virus
4. Root damage or decline
5. 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 :

1. If the orchid shows signs of virus it should be destroyed so that it can't be rescued by any less aware grower.
2. 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.
3. 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.

4. 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 orchid's seasonal cycle gives it the signal.

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 that won't be immediately replaced.

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. 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.
6. 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 it, 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 'Sympodial' (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, its 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 :

1. Fat, thick roots vs thin roots (fat, open air roots have more layers of outer, dead cells, 'velamen' as insulation)
2. 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.
3. 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.
4. Is it a lowland orchid or a highland orchid?
5. 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.

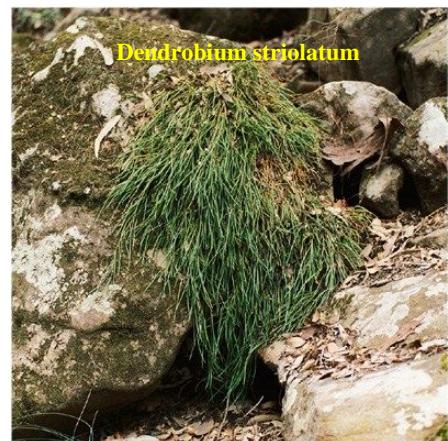
The two widest extremes in orchid leaves are – the *leathery cactus like leaves* versus *the broad soft leaves*

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 its 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 "Adaptations 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. cheiroporum

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 cheiroporum 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

Humour to end the day

Married Life

My wife got stung by a bee on the forehead, she's at the ER now, her face all swollen and bruised, she almost died.
Luckily I was close enough to hit the bee with my shovel!

Husband: "Why do you keep buying plants when you just end up killing them?"

Wife: "Just to remind you what I'm capable of."

Behind every husband who thinks he wears the pants... Is a wife who told him which pants to wear.

and pets



and the environment

So let me get this straight. I go to To the grocery store and buy a lb. of sliced ham wrapped in plastic, a loaf of bread in a plastic bag, a gallon of milk in a plastic jug, a pack of napkins wrapped in plastic, a Greek salad in a plastic container, a plastic bottle of mustard and a plastic bottle of ketchup, and they won't give me a plastic bag to carry it home because the plastic bag is bad for the environment?

