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Next Meeting : * * * **August Meeting CANCELLED** (The Corona 19 situation is still the same, constantly under review as to when we might resume. You will be advised immediately as soon as there is any change.)

Topics from our Virtual Benching

Oh what a wonderful array of lovely and interesting orchids to choose from. Thank you so much yet again to all of you. I can't imagine how Jenny managed to fit 100 pictures and the associated text into a manageable document. It is so refreshing to just pick and choose write up topics from the virtual benching. Perhaps we should drop Best of the Evening features altogether after this experience, maybe replace them with "What I Saw Last Month"?

The Most Exotic, Frilly, Flossy, Fluffy Orchid Of The Month

This month my personal vote for TMEFFFOOTM is RIC Hsingying Emperor, 'benched' by new member John O'Ryan.

This gorgeous thing screams to me of the overindulgence of the French aristocracy before the revolution. Lace collars, in fact lace everywhere, fluffy sleeves and ruffs, even on the men. Flouncy dresses metres wide at the base and dragging along the floor. The "let them eat cake" period as they pranced around trying to impress one another.

Yet this amazingly flossy thing was only bred and registered by Ching Hua Orchids of Taiwan in 2010. A modern orchid reflecting an exotic period from our past.

Yes, yes, I know, all that is a just a silly mind escape of my own but how else to you describe something so extravagantly over the top. It would never win an award for roundness of shape etc., but I think it is just beautiful. I don't grow a lot of Cattleyas these days but I would buy this one.

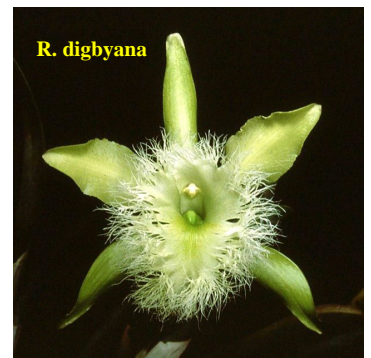
Hsingying Emperor involves a very complex mix of the genes of 12 different species but its breeding goes back a long, long way. At least 10 generations. None of the dozen species in its genetics appears directly in any of the last 5 generations so the genes are very well mixed up.

Many of the Cattleya species in its background have big showy lips, including the glorious Cattleya dowiana, but it is still the good old Rhycholaelia digbyana (the R1 in the RIC, and used to be the B in most Blc's) that contributes much to super fluffy lip here. It is in the background of a huge number of the hybrids in its make up because digbyana was the standard inclusion to get those massive frilly edged lips - just look at the digbyana lip in this picture. But what is more it is very tough, and easy to grow, so its inclusion has benefits other than the lip.

I tell people that my personal average record with Cattleyas is mostly because I don't quite have the right conditions to do them justice but to be honest, I am just not the greatest Cattleya grower you ever met.

It seems however, that our new member John might be pretty good at it. Welcome aboard John. I hope you make many friends at our club and that you will enjoy growing, benching, and sharing with us as much as we do.

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Society News (if anyone has a news item, please phone Jim on 9476 3383, or email at jimbyrdie@bigpond.com)

President Dennys' Desk – Some distancing constraints are still in place and so, we are still in a holding pattern until it is safe to come together. As such, the August meeting is cancelled. Our committee is still keeping in touch, when their phone and internet services behave, to make sure there are no surprises that will adversely affect our society. It is easy to get complacent and the proof of consequence is sadly easier to understand when one observes the heck currently going on in Victoria and other countries. Again, if you need a connection or someone to have a chat with, please do not hesitate to contact me day or night on 0438877689. Some members are doing this so please, if you need peace of mind just do it!

Membership Extension – Members are reminded that the committee has agreed unanimously, that for all paid up members, membership of KOS will be extended until the end of the 2021 membership year.

Virtual Benching – Issue #4 was published by Jenny in July. It was hard to choose this time around so I had to go with two. My naive favourites are *Restrepia brachypus* grown by Jean and Geoff Fulcher and *Scaphosepalum grande* grown by Jane and Peter D'Olier. So many different wonderful plants flowering as our strange year unfolds. It was so good to see our new member John send in some photos. Thank you John and all members who made Jenny's job hard but I am pretty sure, enjoyable. I hope you all continue to do so.

Some advice from Chris' Bench – (a) For those who missed Jenny's email, Garden City Plastics now has 40 litre bags of Orchinata bark (about \$36 each) in stock. The covid process is : call the day before and get a bag put aside; on arrival, as the showroom is closed, you have to phone and they meet you outside with a reader for debit/credit card as they are not accepting cash. (b) For those growers who use terracotta pots and a coarse mix for *Cattleya alliance* (compared to plastic pots with peat and perlite), Bunnings is now selling , including at Dural, the terracotta " orchid " pots that previously were sold at only a few of their stores. There are 2 sizes, the smaller one that sells for \$4.80 has a 16 cm external diameter and 11cm height. This maybe too big for the smaller *sophro-laelia* type cattleyas, compared to pots from the defunct Sandison's pottery that were 13 cm in diameter and a height of 8 cm with more holes. They may be worth experimenting with for larger sized plants.

Other Society News

1. New Member John O'Ryan – Welcome aboard John. I know you got a mention on the front page but we also want you to know what happens when you finally get to come along to our meetings. Bulletins will tell you what is on but we also supply you with a new members pack that explains a few things. We apologise that the practicalities of the present circumstances mean you may not get it for a while but don't worry about it. Just enjoy the newsletters for the time being, and when we get back, we have special 'host' members to show you around when meetings resume.

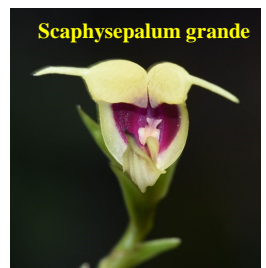
2. Chris Wilson's Orchid Library Report -- It is most unfortunate that members aren't able to attend meetings just now but we all appreciate the circumstances. In the meantime, as our subscription 'orchid periodicals' arrive, I will briefly preview them for you so that once meetings resume, you will know which edition you might be looking for. The April-June 2020 edition of the " Orchid Digest " is new to the library. It features the delightful *Calypso bulbosa* on the front cover. The main article deals with orchids pollinated by beetles. Other articles cover 3 species of Chinese *Cymbidium* that have been found to also occur in Vietnam; a grower's experiences in growing under lights; a newly described species of *Phragmipedium*; the travails of a keen (or perhaps a little crazy?) photographer who filmed the moths pollinating the Ghost orchid of the Florida Everglades; and terrestrial orchids endemic to Chile.

Worthy Mentions in the VB -- Jim Brydie

As usual, apart from the fascinating orchids I have enjoyed writing up in a little more detail this month, there were more than a few others I really wanted to mention even though space meant they are only mentions this time. Good subjects for those who don't mind doing a bit of investigation of their own into interesting orchids.

1. I have long been an aficionado of the various weird species in the *Pleurothallis alliance*, and this month there they were. *Pleurothallis*, *Restrepia*, *Scaphysepalum* benched by the Fulchers and the D'Oliers. We didn't see a *Madevallia* or a *Dracula* this month and those include some of the most colourful Pleuros, but it was enough for me to introduce them to you. "Pleurothallids" (the name for the family of closely related but very different genera that includes the genus *Pleurothallis*) are one of the largest groups amongst all the orchids. Perhaps 4000 species, or about 1 in 8 of all orchids. Most are rather small and inconspicuous flowers, but not all, and there are some of the strangest most wonderful shapes and there are also startlingly bright colours. If you don't yet know about 'Pleuros', you still have a book to open.

2. *Miltoniopsis 'Pink Cadillac'* benched by Gloria and Allan Cushway. What a delightful orchid and how I wish I could master growing these cursed things. Gloria and Allan do it to perfection, and so do some others in our society, but just when I get one growing along nicely we get a hot dry day, or a bit colder one, and it is backwards again. I guess that if I had them growing better and more strongly early then they would have more tolerance later, so I will keep trying. For many years these were deemed part of the *Miltonia* genus until finally recognized as different. Do a few googles and check out beautiful *Miltoniopsis*.



Scaphysepalum grande



3. **Blc Malworth Orchidglade** (benched by the Cushways). This is a very famous and highly awarded orchid that we don't see as often as we should these days. A magnificent golden flower with sort of salmon tones in the lip, it was registered back in 1963 but still hold its own today. A perfect subject to trigger discussion on the breeding of yellow Cattleyas, but perhaps another time.



4. Listed as **Colmanara Wildcat** in our 'VB', the correct genus name these days is *Oncostele*. They started out as *Colmanara* when the cross was made back in 1992, then changed to *Odontocidium*, before the *Oncidiinae* group was reworked yet again and they became *Oncostele*. They could

have any of the 3 names but don't worry too much about it. Just look for Wildcat. They are worth looking for. There is only one cross called Wildcat although there are many cultivars. If you find Wildcat, then that is the cross. These are one of the few *Oncidium* crosses to splash such colour the way they do. Fiery mixes of red and yellow and brown and in lovely patterns. They are very hardy, free flowering, and suited to our Sydney climate. Different cultivars have different mixes of colour and patterns. Checkout google images and go buy one.



5. How many wouldn't love to grow that delightful **Bulbophyllum makoyanum** 'virtually benched' by the Fulchers. *Bulbophyllum* is a huge genus. Over 1500 species in all tropical areas of the world. Africa/Asia, the Americas, and the Pacific including Australia. However, the species come in such diverse forms and flowers structures that unless you know them, you would be forgiven for not recognizing them as one genus. To make sense of such diversity, taxonomist have divided the various species into subgroups called "Sections" and it is common to refer to various *Bulbophyllums* as in this Section or that.

Until very recently, I thought all the daisy flowered inflorescence *Bulbophyllums* like *makoyanum* belonged to a group known as the *Cirrhopetalum*. Many do of course, but I have now discovered that *B. makoyanum* (and many others like it) are in Section *Ephippium*. Hmmm, I need to investigate that further, but anyway, *Bulbos* with a sort of circular head of flowers like a daisy – just like this picture of *makoyanum*. Are very attractive and I love them. Most are warm growers, although they do grow well if you can meet minimum cultural requirements. If you are tempted, do your research first and talk to experienced growers.

6. **Phaiocalanthe Kryptonite** (*Lina Huang*) – a lovely hybrid, the cross between two very different groups – deciduous *Calanthes* (*vestita*, *regnieri* etc) which flower off small bare bulbs, and the huge swamp orchid *Phaius tankervilleae*. *Kryptonite* takes after *tankervilleae* in form and growth, but looks about a ¼ size the size of *tankervilleae*. Flower shape and colour takes something from both sides. Like any hybrid there are some very different cultivars. The flowers of *Lina's* "Chariots of Fire" are deep cerise purple with white backs. Other cultivars range all variations from white to all cerise. I



have only been growing *Kryptonite* for a short period. It appears to grow much like *tankervilleae* but perhaps with less a need for constant moisture. It seems to grow cool too.

(** *Kryptonite* picture credit to Paul Zimmerman, *Orchidwiz* 6.1)



7. **Australian native Dendrobium species and hybrids**. The current range of different colours and patterns available through complex breeding continues to amaze me. I haven't kept in touch with the Aussie native orchid development but our hybrids are progressing in leaps and bounds. *D. melaleucaphillum* is one of the 4 split offs from the old *D. tetragonum* but many authorities still do not recognize the splits so it could be under either name.

All About Stress

A young lady confidently walks around the seminar room while leading, and explaining stress management to an audience with a raised ½ glass of water. All were waiting for her to ask the usual question, 'half empty or half full?'

She fooled them all "How heavy is this glass of water?" she inquired with a smile.

Answers ranged widely from 8 oz. to 20 oz. She took the lead again.

"If I hold it for a minute, that's not a problem. If I hold it for an hour, I'll have an ache in my right arm. If I hold it for a day, you'll have to call an ambulance. In each case it's the same weight, but the longer I hold it, the heavier it becomes."

She continued: "And that's the way it is with stress. If we carry our burdens all the time, then sooner or later, as the burden becomes increasingly heavy, we won't be able to carry on."

As with the glass of water, you have to put it down for a while and rest before holding it again. When we're refreshed, we can carry on with the burden - holding stress longer and better with each time practiced.

So, --- *as early in the evening as you can, put all your burdens down.*

Don't carry them through the evening and into the night ... pick them up again tomorrow.

The Pescatorias -- Jim Brydie

The lovely purple tipped and lipped *Pescatoria wallisii* from Peter and Jane D'Olier in our Virtual Benching, inspired me introduce you to the genus *Pescatoria*. Well, at least introduce it to those who don't already know it of course.

There are about 20 species of *Pescatoria* and They are all quite attractive plants. Lots of relatively soft bright green foliage arranged in a sort of fan shape, and very attractive flowers displayed clearly at pot level all around the plant. Most of the species come from tropical wet forests ranging from Costa Rica to Colombia and Ecuador, generally from rather medium elevations of say up to 1200 metres, but a few occur at higher, cooler elevations. Other *Pescatoria* species I have seen in Sydney collections from time to time are *P. lehmannii*, *coerulea*, and *cerina* but no doubt there are more amongst species lovers and collectors. They grow very well when given good conditions and an experienced grower with a *Pescatoria* should have the odd division to share occasionally. I guess that such pretty orchids would also be expected to be available as seedling flasks now and then so keep your eye out at the big orchid fairs for one or the other.

One thing to note however, is that cultivars of *Pescatoria* species can vary hugely in colour, colour patterns, shape and quality. There is a massive difference between an average clone and one of the selected varieties. An illustration of this factor is shown below with the 3 pictures of *P. lehmannii* and these are good ones. (Picture Credits at the end)



Pescatoria cerina

P. coerulea

----- *P. lehmannii* (3 different colours and forms) -----

Pescatorias are described as 'bulbless epiphytes with leaves in a fan shape'. But, although it may be just my personal belief, I suspect they are not truly bulbless and that if you ever pulled one apart there will be a small bulb like structure at the centre of each fan. There are quite a few of these soft leafy 'fan like' orchids in different genera but they appear to me to be a different category to the more distinctly stiff leaved smaller fan shape, *Vanda* like orchids, such as *Ornithocephalus*.

Pescatorias are part of the large and complex Tribe Maxillarieae which has 8 subtribes. I won't go any deeper into the family structure, and *Pescatoria* is not in the same Subtribe as *Maxillaria* but there are simple flowering similarities between many members of the Tribe that are easily recognized. The main one is flowering with just a single (or occasionally 2) flowers on each spike, but making up for it by throwing multiple spikes off the same bulb. Some of the genera in which you find this characteristic, are : *Lycaste*, *Maxillaria*, *Bifrenaria*, *Bollea*, *Cochleanthes*, *Keffersteinia*. You will also find many others as you expand your collection. *Lycaste* is a perfect example. Multiple flower stems from the base, big showy single flowers.



In the wild, *Pescatorias* often grow as epiphytes near the base of trees with their roots in moist moss and in deep shade. With *P. wallisii*, the elevations at which they are found is only 500-1100 metres and my rule of thumb for tropical orchids is that any orchid that doesn't occur above 1200 metres will need at least a little warmth in winter.

Those found 1500 metres or above may well grow cold (i.e. shadehouse conditions in Sydney in areas with no frost). Those in between may go either way and might be judiciously tried out in one or the other. A few of the *Pescatorias* come from a little higher elevations and should grow cold but I have only grown a small number of species and grew them all warmish and shady in the moderately heated glasshouse.

I have grown them hanging above the benches but got the feeling it was a bit bright and dry for them so now they sit hanging down from the edge of the bench, closer to the floor. Before I recently replaced my lichen damaged 70% shadecloth it was a bit too shady in there. I am hoping that my nice new unblemished 70% will be just about right. The lesson is that they are pretty tolerant and will take a fair range, even a bit too dry or a bit too shady.

With *wallisii*, the flower stem is 15cm long and the flower is about 7 to 10cm across. As is the case with most *Pescatoria*, a heavily flowered specimen is a very spectacular sight.

These aren't the sort of orchid commonly available on the sales table but nor are they all that rare. They grow very well when given good conditions. Some grow cold most do not. Do your research on the mobile or your tablet and

make sure your choice is an orchid you can provide the right habitat.

Now as to hybrids. There are a few intergeneric hybrids between *Pescatoria* and closely related genera like *Warrea*, *Cochleanthes*, *Warczewiczella*, *Keffersteinia*, and even *Zygopetalum*, but the majority are just straight *Pescatoria* hybrids. Some are quite beautiful and Sydney has a part is one of the most stunning. *Pescatoria Alice Hipkins* AM/AOC was registered in 2005 by Kevin Hipkins the owner of Royale Orchids, and named after his mother, but the cross was made by Robert Hamilton in California. Kevin was a long friend of our society and we were very sad when he passed away in 2018.



P. Alice Hipkins 'Peats Ridge'

Picture credits : *P. wallisii* (Jane D'Olier); *P. coerulea* (Eerikas Bilder), *P. lehmannii* reddish and blue cultivars (Pedro Ortiz Valdivieso), *P. lehmannii* dark red (Society Colombiana de Orchid) *P. cerina* (Jay Pfahl), *P. Alice Hipkins* (AOC awards), *Ornithosephalus* (Jim Brydie)

Who Doesn't love a big tessellated Blue Vanda? -- Jim Brydie

Well not me. If you are having trouble with that double negative, yes I do love big blue Vandas. The trouble is, and forgive me if I have told you all this before, the vast majority of *Vanda* species that make up these huge flowered showbench Vandas, are warm, lowlands, tropical orchids that insist on growing warm, moist and bright.

V. Pachara Delight (benched by P&J D'Olier) -

On one of my very first trips overseas I visited Bangkok and got a taxi out to the one of the big nurseries that do international business. I think it was Thai Orchids but it was a long time ago. Anyway, boy was it hot and humid. And the orchids – mind blowing for a relatively new orchid grower. I hardly knew what a *Vanda* was back then, but from pictures in books I recognised all these 'monopodial' orchids growing dangling from wires over what looked like long shallow fish ponds. Monopodials are the type with no pseudobulbs. The ones that grow vertically from a single growing point, getting taller and taller, having more and more opposite leaves as they grow. They occasionally make side growths from side buds but not often. And there they were. Huge masses of aerial roots growing in curtains all over the place. They seemed to have been started in slatted wooden baskets but there was no sign of medium in the baskets. Obviously, in those conditions they didn't need it.



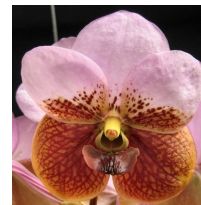
I hung around the nursery for a few hours marveling at all the orchids that were so new to me, and there were magnificent flowers everywhere. While wandering I saw how the nursery watered and fed their Vandas. Nursery workers walked down the side of each fishpond with what looked like big cans nailed onto the end of sticks, scooped up fishpond water and applied it to each *Vanda* in turn. Apparently they went through this routine several times a day. How's that! Taking care of watering, humidifying, and fertilizing, all in one go. No wonder I was sweating rivers by the time I left. I couldn't take plants home because of plant quarantine requirements but they did sell me two flasks of their latest *Vanda* crosses. I didn't have much hope but I managed to grow quite a few, even flowered a couple eventually, but I couldn't duplicate the fishpond or the humidity let alone the warmth they really needed.

With that amusing tale out of the way, let us look at why Vandas are probably not for the average grower in Sydney. Two species dominate the breeding of big round flat flowered *Vanda* hybrids. They are *sanderiana*, and *coerulea*.

V. sanderiana has been debated by taxonomists for more than a Century. Many conclude it should stay a *Vanda*, many think it should be in a different genus by itself. At present it is a *Vanda*.

It comes only from the island of Mindanao in the Philippines. Although only few might be left in the wild, it was recorded as mainly occurring on the trunks of trees at elevations below 500 m. Where it grows, the average conditions across the year are : daytime 29-31°C, night time 21-22°C, humidity 80-85%. Rainfall is moderate to heavy all year. Now that - is lowland equatorial tropics.

So why the heck wouldn't they use other less hard-to-get-along-with Vandas to make hybrids more suitable for more temperate zones? Well the trouble is that there aren't many prospects. *Sanderiana* is the biggest, roundest, most gorgeously patterned *Vanda* of them all. Its flowers are the largest, flowers nominally 9 or 10 cm wide x 11 cm, some cultivars even larger. The full picture on the right is from the travaldo.blogspot.com which I have noticed a few times has well balanced info on a species I have been researching. However, the picture actually comes from the Flickr shared photos website and was posted by Rugged Lens. I may be wrong but it looks like a rather raw but beautiful cultivar - not like the awarded types but really nicely coloured. Its petals are a little tilted as well. The close up on the left shows the contrast in shape to a top class cultivar. As to breeding partners, let's look at where it went.



The no.1 prospect as a hybrid partner is *Vanda coerulea*. This is the only *Vanda*, perhaps even the only orchid in the world, with genuine sky blue flowers. What is more it's flowers are quite large, usually about 9 cm across **and** it

occurs at somewhat higher elevations making it require cooler, less demanding conditions to grow. But don't get too excited, it is not exactly alpine. The Baker's description in Orchidwiz is illuminating. "... found in the Khasia Hills NE India, mountain regions of Burma, Thailand, and southwest China. They usually grow high up in rough-barked trees that are not exceedingly leafy so that the plants are fully exposed to the sun, rain, and wind. The roots sprawl over the dry rough bark with no moss or lichen present. Therefore, they are able to dry very rapidly after becoming wet. Over most of the range they are found at 910-1520 m, but in Thailand cultivated plants reportedly grow well under natural conditions in Chiang Mai which is at 340 m.

Now, if you remember from my 'grow cold' / 'grow warm' rule of thumb described in the Pescatoria article, 1500 m is my tipping point. If we could believe from Bakers information, that it is not unusual to find coerulea at 1500 m, then we should be able to grow them in a frost free shade house in Sydney. However, while they are certainly more temperature tolerant, I have found that there are limits. I can grow them in my roofed shadehouse but they just don't look happy in winter. I think they would be happier in the same environment if I lived a little further north, toward Qld, or even just closer to the coast in a Sydney beachside suburb. But despite some reservations, coerulea is **much** cooler growing than sanderiana and has leant itself to the breeding of much more easily cultivated high class Vandas.



Despite those positives, Vanda coerulea also has two distinctive negative features. First, the petals and sepals are connected to the flower with a narrowed stem like an isthmus. It looks like the petals are connected out away from the centre of the flower leaving a gap. Second, its petals are twisted at about 90 degrees so that they sit nearly horizontal to the view. You can even see a trace of it in some of the flowers in the image above. HOWEVER, there is supposed to be a Thailand form of the species that doesn't have the twisted petal fault. Many (myself included) are suspicious that this 'form' is really a man-made back-bred hybrid introduced as a special 'best' form. I doubt we will ever know for sure because modern line bred coeruleas (including above?) all include this suspicious clone and have little trace of this fault.

Hybrids : So how could man not make the hybrid between these two beauties? Shape and size from sanderiana, tessellated pattern and magnificent blue from coerulea. Well of course, they did do it. It wasn't the very first hybrid made with sanderiana but it was close, being the 4th hybrid, way back in 1931. The cross is called V. Rothschildiana, and it is as good as they expected. They come in a range of colours from pinks to blues, and purple, which suggests that there is a recessive pink colour in sanderiana. **V. Rothschildiana 'Blue Ribbon' FCC 1978 -**



But of course, breeding has come a long way since way back then and has followed many twisted and tortuous turns. Other species have been introduced to create other features and colours. Vandas dearii, merrilli, tricolor, luzonica, and several others are common but all these are much smaller flowers than sanderiana. Their introduction is mostly for colour and smaller plant size. A huge amount of the breeding seems to involve introduce a feature then backcross to sanderiana to regain size and shape. Curiously to me, even coerulea appears in relatively small percentages in many of the large flat showbench Vandas.



The picture at the left is **V. Kulwadee Fragrance**. It is being grown by our members Geoff and Jean Fulcher. A beautiful flat 10cm flower in heads of 10 or so. It is a lovely orchid in purple tones but with hints of that coerulea tessellation but less defined. Its genetics are 52% sanderiana, 22% coerulea, and smaller %'s of curvifolia, dearii, luzonica, and tricolor. The dominance of sanderiana is typical in big round flat Vandas. Colours like reds and yellows have been achieved but mostly producing slightly smaller flowers. A further line I personally admire comes from using the alba form of sanderiana which is mostly white in the upper half and green in the lower half. A very attractive combination. Many very attractive big Vandas have pursued these colours very effectively. For example, Crownfox Moonlight made by Robert Fuchs in 1997.

As well as V. coerulea, some of the other species use in hybridizing have also provided some further temperature tolerance but no matter which way you look at it, the big flowered beauties with the massive round flowers, are all orchids that require nice warm, humid conditions. Don't take them on until you can give them some approximation of the growing conditions they need.



V. Crownfox Moonlight

Picture Credits : V. Phachara Delight – J. D'Olier; V. sanderiana - © Rugged Lens; V. coerulea – Latvijās on Pinterest; V. Rothschildiana - OZW lib in Orchidwiz; V. Kulwadee Fragrance – G&J Fulcher; V. Crownfox Moonlight – O. Mollenhauer in Orchidwiz

International Health Announcements

- (a) The World Health Organisation has announced that dogs **can not** contract covid-19 and that dogs previously being held in quarantine can now be released. To be clear – WHO let the dogs out.
- (b) Finland has just closed borders and manned them with armed guards. No one will now be crossing the Finish line.
- (c) Grocery stores in France have been hit by a tornado, all that is left is de brie. Visitors are going crackers.

A commentary on growing *Habenaria rhodocheila* and some relatives --- David Vaughan

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Habenarias are one of the few orchid genera found world-wide, with the exception of the Antarctic continent. A quick squiz at Wikipedia reveals that at least 880 species of *Habenaria* have been described, and that there are 17 known species native to Australia. Three of these Australian species are represented below in Figs 1–3: *Habenaria elongata*, *Habenaria praecox*, and *Habenaria propinquier*. The vast majority of the *Habenaria* species are reasonably attractive, mostly with green and/or white flowers, but are not generally regarded as desirable subjects for cultivation. This statement would apply equally to all of the Australian species.



Fig. 1 *Habenaria elongata*



Fig. 2 *Habenaria praecox*



Fig. 3
Habenaria propinquier

However, some of the *Habenarias*, especially the few Asian species discussed here, are much more attractively coloured, and very highly sought by species collectors. These include *H. rhodocheila*, *H. xanthocheila* (i.e. *H. rhodocheila* subsp. *rhodocheila*), *H. medusa*, and *H. carnea*.

Growth - *Habenarias* are deciduous terrestrial orchids. They usually grow and bloom in Summer and are usually dormant over autumn and winter. The habitat where *H. rhodocheila* is found experiences warm seasonal monsoonal rains and a dry cooler winter period. This dry period is critically important for consideration when culturing this and other tropical *Habenarias*.

Growing *Habenaria* species and their relatives has always been fun and challenging for me. I enjoy the challenge of blooming them successfully but then also the challenge of seeing them through a successful dormancy. I have been fortunate though—having originated from the Western Cape region of South Africa, I have been exposed to growing terrestrial orchid species for some time, some of which (South African native species) have been impossible.

Thankfully, *Habenaria rhodocheila* (Fig. 4) and some closely related species and their hybrids, are far more forgiving. That said, you should not feel discouraged if you have ever killed one of these beauties by accident. We learn from these mistakes, and perseverance is the key to successfully caring for these special orchids.

Habenaria rhodocheila is native to Assam, Cambodia, parts of China, Laos, parts of Malaysia, Myanmar, Philippines, Thailand and Vietnam. It is probably one of the most familiar species to growers because it is widely available in commercial culture. It is also easily recognisable when in bloom, although maybe not so if you consider recent taxonomic works which have considered it a species complex. In taxonomy, that means that what was once thought to be a single species is actually made up of several closely related species that look very similar to each other. This can often lead to confusion and differences in taxonomic interpretations. A good example is *H. xanthocheila* which has been considered a yellow variant of *H. rhodocheila* but also a separate species by some. The Kew Plants of the World online database currently lists *H. xanthocheila* as a subspecies of *H. rhodocheila*, called *H. rhodocheila* subsp. *rhodocheila*. The ‘orange’ *H. rhodocheila* that is available (Fig. 5) is probably a mix between *H. rhodocheila* and this

subspecies, although not supported by some (see the research of Adthalongrong *et al.* 2015).



Fig. 4 *Habenaria rhodocheila*



Fig. 5 *Habenaria rhodocheila* 'orange'

Culture - Once the plant dies back in preparation for dormancy, its underground tubers store water and nutrients to support the next season's growth. The tubers remain dormant until triggered to shoot again with increasing temperatures and moisture. If the tubers remain too damp during dormancy, they are prone to rot, and they will die. Therefore, the correct watering regime is arguably critical for growing them successfully. The previous sentence is probably old hat for many of you readers; you have heard it all before, but you might not realise just how much your selection of potting mix, pot size and even watering delivery methods can influence how much water is available to these plants and for how long. Do not be fooled by the appearance of the surface of the potting media - its what's going on beneath that counts.

Habenarias can be grown in different media. Some people grow them in straight sphagnum moss, and some grow them in various soil mixes. When considering this, and when you see other successful growers presenting their plants, look critically at pot size and media composition. There is usually a correlation between smaller pot size and a media that has greater water retention, because small pots lose more water more easily to various processes, notably evaporation. Simply put, if the same media was used in a larger pot with the same watering regime, the results may not necessarily be the same!

So, what has worked for me then? I like to use a medium based on a commercial bagged potting mix and larger shallower pots where the width of the pot is greater than or about the same as its depth. A good size has a diameter of about 17 cm. This provides a more even elimination of water from the potting medium that you simply cannot get when using soil-based mixed with deeper pots. In the latter, more water is retained in the deeper layers and these layers remain wet for longer, which can be a problem if you are not aware of this, especially at the onset of dormancy. Pots must drain quickly and easily too. I always drill in several additional holes at the base of the pots for improved drainage and I cover these holes inside the pot with a single layer of coarse gravel before adding the potting medium to avoid them clogging up.

The following potting mix I find works well for *H. rhodocheila* and its relatives, and is easy to make. All you need is at your local Bunnings:

- 3 parts Osmocote Rose, Gardenia and Azalea premium potting mix

- 1 part Brunnings peat moss
- 1 part Brunnings medium sized perlite
- 1.5 parts Brunnings propagating sand
- 1.5 parts Brunnings charcoal

The *Habenarias* I have kept seem to prefer a lower soil pH, hence the use of the Osmocote Rose, Gardenia and Azalea mix as the base soil component, and the added peat moss. The peat moss also retains water without getting too soggy, and the other components provide good stability and drainage.

When it comes to watering, I never use a hose or pour water from a container into the pot. I only use a pressurised sprayer which evenly wets the surface of the potting medium with a fine even spray, and only for 5 or 6 seconds each day per pot at the height of the growing season. This allows water, over successive daily waterings, to be evenly absorbed throughout the medium, keeping it damp but not soggy. The combination of this watering method and the above potting medium and pot size works extremely well for these plants. At the beginning of the growing season, when the new shoots begin to emerge, concentrate on spraying water around the growth and towards the sides of the pot to avoid excessively wetting the growth point. As the growth elongates then continue to water normally. I have used tap water (in Rockhampton, QLD) without any adverse effects, but when I can collect rainwater, I use this as much as possible. If you are fortunate to have a reverse osmosis unit at home, then all the better!

When it comes to successful culture of *Habenarias* it is all about root growth because good root growth will result in good tuber formation. Fertilisers can easily burn orchid roots, regardless of whether these are *Habenarias* or not, and I avoid any granulated fertilisers which can greatly increase the amount of dissolved nutrient salts in the water given to the plants. I only use liquid fertilisers such as Nitrosol and sometimes fish-derived liquid fertiliser, with my preference being the former (both available at Bunnings too). I use at half strength and feed during active growth only, once every two weeks, alternating with a treatment of Seasol which does wonders for stimulating root growth.

After the last flower has opened, I reduce watering and after 2 more weeks phase it out and let the plants dry out completely. Depending on temperature and humidity it can take the potting media up to three weeks to dry out. This also depends on the pot size you use.

Once dried out I unpot the plants to check the new tuber growth and to trim off any remaining dead stem or foliage. This is a very rewarding stage because the success of your growing conditions over the growing period will be reflected in the size and number of new tubers. These tubers can be repotted, ensuring that they are oriented correctly with the growth tip at the top. I position mine about half-way down the pot so that they are essentially at centre depth, with the growth tip of the tuber usually about 2–3 cm below the surface. Some people store the tubers in moss or in plastic bags or containers until they see them shooting new growth. I don't recommend this because tubers can lose moisture quickly like this and can desiccate irreversibly if you don't keep a beady eye on them, especially if they are small. Keeping them in the potting medium in their pots in a cool, dry place, is a stable environment where they will not rapidly lose too much moisture. Every week or so I do a quick spray to just dampen the surface of the pots with a light sprinkle. Otherwise I do not add any additional water at all over the dormancy period. It can be tempting to water them, but just don't.

I have had some success growing *Habenaria rhodocheila* from seed too a few years back (Fig. 6). Also reflecting its preference for an acidic growing environment, I found that the seedlings grow better with the addition of acidic pineapple juice to the basal flask medium. Growing *Habenarias* from seed can only be done to any measurable level of success using special equipment, including a laminar flow cabinet. As with almost all orchids, *Habenaria* seeds in the wild can only germinate with the association of a mycorrhiza, a symbiotic relationship with a specific fungus that provides the nutrients the seeds need to germinate. These nutrients are replaced artificially in a laboratory (usually) by using a special seed sowing medium that is kept sterile. These sterile containers are colloquially known as flasks, and some of you will be familiar with the flasking process, which is another article topic altogether!



**Fig. 6 *Habenaria rhodocheila*
60-day old seedlings in flask**

Some more readily available showy *Habenarias* include *H. rhodocheila* as mentioned above, one of its hybrids, *H. Regnierii* (Fig. 7 and 8), which is a combination of *H. carnea* (Fig. 9) and *H. rhodocheila*, *H. medusa* (Fig. 10), and also *H. dentata*. All of these grow successfully using the above methodology and are extremely rewarding to grow and to see flower. They make an interesting addition to any collection and if you haven't considered trying them out, I encourage you to do so. They are not difficult to maintain as long as you maintain a good understanding of their watering needs and their deciduous nature. These more commonly available species and hybrids prefer to grow in

warm and humid conditions with shade. They will do well in a greenhouse if you live in a cooler part of the country.



Fig. 7 *Habenaria Regnieri*



Fig. 8 *Habenaria Regnieri*



Fig. 9 *Habenaria carnea*



Fig. 10 *Habenaria medusa*

Reference: Adthalongrong, A., Sachati, S., and Saruns, M. (2015). - Hybridization between *Habenaria rhodocheila* and *H. xanthocheila* and inheritance of flower colour. *Acta Horticulturae* 1087: 351–356.

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Some Irish Humour to end the Month - Dublin's worst air disaster occurred early this morning when a small two-seater Cessna plane crashed head on into a cemetery. Irish search and rescue workers have recovered 2826 bodies so far and expect that number to climb as digging continues into the night