



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

(Established in 1947)

A.B.N. 92 531 295 125

18th March 2024

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

Patrons - Pauline and Trevor Onslow

President : Dennys Angove 043 88 77 689

Secretary : Jenny Richardson

Treasurer : Lina Huang (and Sales Table)

Vice President : tba

Editor (Hon. volunteer) : Jim Brydie

Society mail to - PO box 1501 Lane Cove, NSW, 1595

Next Meeting : Mon 18th March 2024

Committee : Jessie Koh (Membership Secretary / Social Events)

Committee : Herb Schoch (Community outreach, Sales Table)

Committee : **New committee members are required**

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

web site (active link) : <http://kuringaiorchidsociety.org.au>

Society email : kuringaiorchidsociety@gmail.com

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 complete attendance list on arrival.

The hall is open from 6.30pm to set up the hall (please help), benching can begin from 7 pm but no benching until all the class dividers are in place. Give the set up team time to get everything organized. The meeting will of course include the usual **monthly raffle**.

Culture Class – Unfortunately, no culture class this month.

The sales table will be open as usual but as announced last month there is now a **“Sales Table Open / Sales Table Closed” sign** to aid our stall managers and we ask members selling plants to follow the guidelines set out on p2/p3.

The Supper Break – The society supplies the tea, coffee, milk, sugar etc, **but - we ask all members to bring in a contribution of cake, slice, or biscuits, etc for the supper table. Please bring something to add. AND - please everyone, bring your own mug for tea or coffee.**

Supper is not self-serve, members are assigned to serve to minimise handling. Our supper volunteers this month are **Ann Byron & Gloria Cushway**.

After the break, our **Guest Speaker** will be **Gary Hodder on the topic of “Orchids for new growers”**. Gary is a very experienced grower and speaker and has travelled Asia looking for orchids. We haven't heard Gary at our club before so this may hopefully be the start of a long friendship. Make sure you don't miss it.

Best of the Evening Species – Paph. parishii - grown by Jim and Cynthia Brydie



I haven't been to many meetings lately but I greatly enjoyed last month. A good culture talk from Dave and another great talk from Christine. This old parishii of mine has collected a few best of evenings but it and a little Habenaria were all I had to bring, and both got firsts.

I won't repeat all the parishii write up blather again so if anyone wants to know more about parishii, you will have to research it elsewhere or ask us for one of my older bulletin write ups. Try March 2018 or March 2020.

Most keen growers are gradually drawn to the larger growing multiflowered Paphs as they gain more experience but most of the species are very hard to come by and very expensive as flowering size divisions. They are relatively slow growing compared to the single flower types and 50 mm pot seedlings might take 10 years or more to grow to flowering size if you can keep them going that long. The most spectacular species like rothschildianum need a little winter warmth but parishii and a few others will grow cool.

The multiflowered Paphs are lovely orchids and well worth learning how to grow. Keep an eye out for them at meetings and fairs but be prepared to make an investment and put the right effort into learning how to deal with them.

Give them a good look over whenever they are benched and at shows. There are several significantly different types even within their separate little group. Find the types or even cultivars that you like best before you buy. They are certainly imposing orchids.

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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 – Given the weather extremes on our last meeting day I didn't think we were going to have a meeting at all. It was quite severe but luckily subsided just before 6 pm, so off we went. There were only 36 members present, however, it was a good meeting just the same. We had lots of apologies, mostly due to concerns about travelling in bad weather. I hope all members who were unable to come are in a good place and managing ok. Our new hall-setup seemed to go ok and **David's** culture class was well received. The extra sales table also went well, which made selling the members' plants go a lot smoother, along with the sales table OPEN and CLOSED signs. I thank **Helen, Di** and **Betty** for managing our supper table and its preparation and I also thank all those who contributed to a tasty supper which was appreciated by all. Thanks also to **Lee** for selling the raffle tickets and I extend a special thanks to **Christine** for her delightful and most enjoyable talk on *Different Ways to Grow Orchids*. Lastly, I thank all those who helped pack up the hall after the meeting, it really makes the evening more enjoyable.

Constitution and governance matters – At the moment we have only 5 members on our committee.

The constitution requires 5 attendees to be present at a committee meeting where business decisions are required. Our committee meetings are now being held in St. Ives. The committee meetings occur on the Wednesday after the monthly meeting. We have over 100 members, many of whom enjoy our meetings. A committee of 8 to 10 members is needed to keep our society healthy and productive so, please seriously consider joining the committee to help. There are several tasks that need to be done for each meeting where members do not need to be on the committee to complete. I will be preparing a list of these tasks and asking members to help where they can.

New Orchid Find – Kew Garden researchers and partners found a new orchid on top of a volcano in Indonesia in 2020 and the orchid has now been listed as one of their top 10 finds. The [article](#) also includes other plant finds which may also be of interest. The orchid was described by KEW botanist **Dr. Andre Schuiteman** and the photo was taken by **Yanuar Ishaq Dwi Cahyo**. The article link follows:

<https://www.discoverwildlife.com/plant-facts/10-plant-and-fungal-species-new-to-science-in-2023>.



Supper volunteers – Supper is an inclusive social event at our meetings and as such helpers make it a more enjoyable experience. **Di Flinders** will be sending around a volunteer helpers' sheet next meeting so please put your name down and remember, volunteering is not gender specific (hint). If you need some more information about what tasks are needed to help out, we can give you a helper's note. Being a helper is not about supplying food, but by all means bring in a contribution if you are able.

Wearing masks – COVID is still around, I will no longer be wearing a mask at our meetings. However, please feel free to continue to wear a mask at our meetings and hand disinfectants will be available.

Member's 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.

Other Society News

1. Our Committee – We are still looking for committee people. Don't wait to be asked, why not offer your services.

2. New Members – No new members this month but please everyone, don't forget to wear your name badges. It does help with conversation, especially for those of us with notorious 'forget names' syndrome (don't laugh, it may happen to you someday).

3. Membership Fees – **!!Please members, we can't just keep asking!!** You might be wondering just what all the fuss is but we do legally need to keep a valid membership list and we don't like to blithely just drop names off as soon as payment cover runs out. Members are family. If non-payment is an oversight we would rather pester slightly than lose you. Current fees are \$15 single, \$18 family.

If you are not sure whether you have paid, email us at kuringgaiorchidsociety@gmail.com before paying again.

You can pay by bank transfer to - **Westpac Bank, BSB No 032 188, account name - Ku-ring-gai Orchid Society Inc. and account number 103568**. If you use this method, **please** use **your full name as the payment description** or **your phone number** if your financial institution does not allow you to enter your name.

You can also pay Jessie Koh, our membership secretary, in person at a meeting by cash or a cheque made out to **Ku-ring-gai Orchid Society Inc** or alternately you can also post a cheque to KOS, PO Box 1501, Lane Cove, 1595.

4. Culture Class New set up – The new arrangements worked quite well last month and we will gradually fine tune the process as we go along. I watched David's talk from a bit further back last month and not only were the class attendees listening to every word, all those lounging in chairs further back were taking it all in. The meeting was like having two guest speakers on the one night. Great value. Thanks David, you handled it beautifully.

5. Sales of Member's plants: **DON'T FORGET** **If you have plants for sale, please keep them in your car** **until the**

sales table is fully set up with regular stock like pots and fertiliser. Check with Herb or Pearl before you start bringing sale plants inside. You can't stash them in the hall or anywhere else either because they become a cluster point with potential buyers wanting to poke through them. And all please note that sales of both *member's plants sales and culture items* will **ONLY** occur from the sales table **AFTER** the **open sign** goes up.

For sellers who are in a bind for time we will find helpers to bring your plants inside. Please ASK.

Dates of Coming events

Sat 13, Sun 14th April– Collectors Plant Fair Hawkesbury racetrack. Fabulous plant lovers fair, 100 stalls.

Sun 14 April MWOS Auction, Cromer Community Centre, Cromer (auction catalogs available at MWOS)

17-19 May – Orchids Out West, Hawkesbury Showground, Clarendon

29-30 June Mingara Orchid Club Fair & Show, Mingara Recreation Club, Tumbi Umbi

Best of the Evening Novice – *Phalaenopsis hieroglyphica* grown by Nancy Yao



It isn't hard to see where the taxonomist describing this species came up with a name for it. The wonderful patterns on the petals and sepals do look like deliberate written symbols of some unknown language don't they? Maybe they are in caterpillar language saying you had better not eat me. I am magic and my curse will turn you into a leaf.

Phal. hieroglyphica is endemic to the Philippine islands. It grows in deeply shaded, humid forests, dangling down from the trees in which it grows epiphytically (as picture at right by Sunoochi). The narrowish, leathery leaves can be up to 30 cm long.

The 5 – 6 cm flowers open simultaneously in clusters of 3 or 4 on an arching to pendant inflorescence. The base colour of the flowers is



white to cream but usually with a greenish tone at the ends of the segments. The hieroglyphic patterns are in purple toned red. After the flowers have finished for the season, the flowering stem should be left in place as long as it remains green and alive because it will flower again year after year while it lives.

I don't have much personal experience with hieroglyphica but according to Travaldo on his website (advice I would trust), hieroglyphica grows better mounted than potted. This suggests that its root system may be a little more sensitive to being left in over moist conditions in a potting mix. Despite this, hieroglyphica does come from a constantly moist environment and would equally react negatively to being allowed to be too dry too long.

Interestingly, I have found a few other Vandaceous orchids that seem to want just this set of conditions. ie moist and humid and never dry but also a root zone that can remain airy and well drained. Sometimes this can be provided by growing the orchid in a slatted basket or shallow net pot and hanging it up above your other orchids. The humidity from plants below helps maintain moisture, but the hanging airy environment stops it becoming over wet.

I have grown several of its sister relative species in the fashion described and they seemed to enjoy it, but as I said, I have little experience with hieroglyphica itself.

So what else? How about temperature? Well the Philippines are well below the tropic of Cancer, and as hieroglyphica is a lowland orchid my experience tells me that makes hieroglyphica a warm growing orchid that would be most unlikely to tolerate temperatures below say 12° C (probably better even higher).

And finally, there is that issue of light. Travaldo suggests low light (10,000 to 12,000 lux) but for the orchid to get that amount of light for 11 to 12 hours a day. I expect that assessment is probably quite accurate but the definition of light by lux range has always thrown me and I need to go hustling off to google to find comparative examples.

In this case I have interpreted the requirement to mean hieroglyphica to be looking for an enclosed growing house so that humidity is maintained, and if the growing house is covered in only 50% shade cloth, I would grow hieroglyphica in the shadiest end if there is one, and hang from a bench edge under any other hanging or benched plants. Being closer to the floor than the roof has the advantage of greater humidity as well as reduced ambient light.

I hope I am not bombarded next week by all the hieroglyphica growers telling me I got it all wrong.

And for those curious about light measure and why, the article a bit further down might provide some answers.

Congratulations Nancy. This is an orchid we don't see all that often, and grown beautifully as well.

Irish Humour - Paddy & Mick stagger out of the zoo with blood pouring down from all over them..
"To hell with that" said Paddy "That's the last time I let you talk me into going lion dancing"

The Gorgeous Cattleyas

by Jim Brydie

Each month we see a beautiful array of hybrids from the Cattleya alliance. A small number feature in the occasional Best of the Evening write up but the flamboyance of the beauty of this group deserves much more. So this month we feature a little wider selection from recent meetings just to celebrate their wonderful gob-smacking beauty.



SLC Dal's Touch 'Christina'



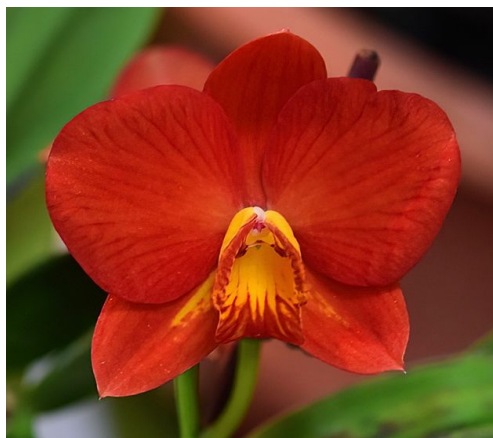
Cattleya Lulu 'Pink Blush'



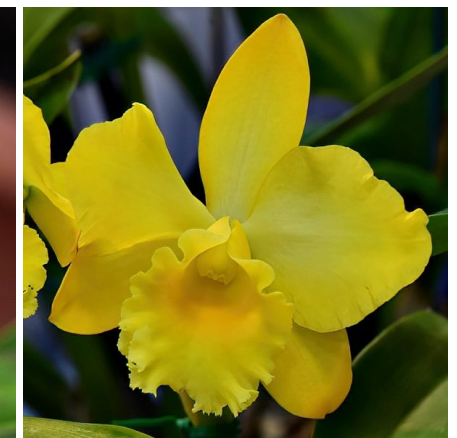
Gct. Dash of Brandy



Rlc. George King 'Southern Cross'



Cattleya Red Jewel



Rlc. Yellow Ball



Rth. Moon Star



Rlc. Toshie Aoki 'Amanda Fai'



Catt. Lyn Spencer 'Cha'

Taxonomically the subtribe that makes them a genetically related group is Laeliinae, and that is the expression we use on the benching cards and at shows. But it sounds so botanic and latinised. There are over 40 different genera in Laeliinae, covering around 2000 species, and uncounted thousands of hybrids.

Obviously, not all Laeliinae species are big flowered, gorgeous things. Like most orchid groups there are also the small, the weird and the curious. But even among the lesser known Laeliinae genera there are still many very attractive ones too.

It's just that if what you are looking **IS** the **big flowers**, the **frills**, the **patterns**, and **amazing colour**, you can't escape the fact that it mostly stems from the genus Cattleya itself. With the hybrids, along with the basics of size and colour, there are all sorts of smaller bells and whistles the breeders use to improve shape or colour combinations or whatever.

So theoretically we have 40 genera and a bit under 2000 species to choose from in the gene pool. We know all of these are Laeliinae which means (theoretically) that they are all on the same branch of the evolutionary tree. But that is a little too simple. Every genus represents a significant split away from its ancestor and although geneticists could probably tell you which genus evolved from which, it isn't a clean sequential process. There are side branches and

branchlets off those, so some genera are more closely related to each than to those on different branches.

The nett of all that is that it can't be taken for granted that one species in Laeliinae can hybridise with any other. In most cases the breeders figure that out by experimentation, the same way they gradually figure out which factors are dominant and which recessive, especially in regard to colours and shapes.

The most common genera used in our "Cattleya" hybrids are Cattleya, Laelia, Rhyncholaelia, Brassavola, Broughtonia, and Sophronitis. However, as a result of reclassification, Sophronitis is now Cattleya, and 4 old Cattleya species became a new genus - Guarianthe. Also, Broughtonia was expanded to take in some branches of Laelia so Guarianthe and Broughtonia are also important breeding gene pools.

Epidendrum and it's side genera like Encyclia, Prosthechea, and a few others have been tried with the big guys but as a parent, Epidendrum has at least two poor characteristics. Epidendrums tends to be smaller flowered and a very large number of its species grow with tall cane like stems (equivalent to pseudobulbs). Both these characteristics seem to be dominant in making hybrids, creating small flowered tall stemmed hybrids.

Amongst the useful hybrid genetic pool we see the full range of colours but some colours are uncommon. If you rule out the reedstem Epidendrums, there is only one small group that can supply us with really red flowers and they are the species that used to be Sophronitis. But regardless of what you call them, that small group is still where just about all the reds in "Cattleya" hybrids come from.

Yellow is another relatively rare colour. Twenty years ago I would have said there are no really yellow Cattleyas apart from the usually pale yellow petalled Catt.

dowiana. The only other Laeliinae yellows were perhaps the strange little Laelia aurea (previously regarded as a colour form of Laelia rubescens) which is not much use for breeding because the flowers are rather short lived, and then there are the yellow species among the rupicolous Laelias, like Laelia bradei, gloedeniana, flava, and few others.

When the Taxonomists moved Sophronitis to Cattleya, they also moved to Cattleya all the Brazilian Laelias, including the big Laelia purpurata, and all those little "rupicolous" Laelias. So now there are genuine yellows in Cattleya but the problem with those rupicolous yellows is that they have smallish flowers (5cm or so) and the plants grow in very weird conditions. Virtually on cracks in rock surfaces in near desert like conditions. They are yellow, but the yellow comes with baggage when you breed with it.

From this you can see it was understandable that all the early hybridist attempts to make big yellow Cattleyas were focussed on using that one other species – Catt. dowiana.

I haven't seen Catt. dowiana in the wild but from available pictures (see below) it seems that most yellow dowianas are a rather pale yellow. Select cultivars have a much deeper and richer yellow but it seems to me that they are pretty much in the minority.

Just the same, although the dowiana yellow isn't the best yellow, dowiana does have one other big factor in its favour. The dowiana lip is a real stunner. It can be 9 cm long and 7-8 cm wide, and the rich purple and yellow colours and patterning are fabulous.



Sophronitis coccinea



Pic from Ecuagenera



cultivar Alejandro



pic by Weyman Bussey



pic by Peter Nguyen

As you can see the lip isn't always exactly the same but I have yet to see one that wasn't beautiful. But despite those positives, it certainly hasn't been easy to create large flowered, flossy, yellow Cattleya hybrids.

An excellent article on <https://chadwickorchids.com/> tells us: "as breeders soon discovered, that the color yellow in cattleyas is hopelessly recessive and is nearly always lost when another color is introduced. For example, a yellow flower crossed with a white flower does not yield any yellows. In fact, it yields purple.

The second problem is that there are only a handful of yellow cattleya species in existence and these few have flowers that are either poorly shaped, very small or exhibit traits that are altogether unsavory. For example, the most well-known yellow species, Cattleya dowiana, has petals that are narrow, fall forward, and fold in a week.

So it is not surprising that, even after a century of breeding, there are limited highlights to report.”



However, that article also goes on to report the background to the development of what was in about the year 2000, the best yellow hybrid seen so far, and that was **Rlc Williette Wong** (pic at left). And it sure is a great one. It still contains a large proportion of dowiana's genes but it also contains parts of 9 other Cattleya species. One direct parent is Rlc Toshie Aoki which produced an amazing array of colour forms including some awarded cultivars in yellow with a red lip, but also comes in bronze, some splash petal types and one is even a wonderful claret wine colour. I assume that the cultivar used in Williette Wong was one of the yellow and red types.

WW's other parent was Rlc Tassie Barbero which also comes in a wide range of colours including rich yellow and reds. Williette Wong seems to have taken the best from both parents. Certainly a great improvement on the old yellow species dowiana.

I didn't intend this article to become 'the neverending story', but there is just one more important physical characteristic in big Cattleya type breeding that I would like to mention before we end, and that is a characteristic that affects a very large number of hybrids.



It comes from just one single species - *Rhyncholaelia digbyana* (right). Digbyana flowers are beautiful in their own right. They are huge at up to 18 cm across and the amazing frilly lip is also very large. The whole flower is usually either a creamish white or more commonly a lovely pale green. Perhaps pollinated by night flying moths? The general shape of the flower is similar to the other large flowered Cattleya types but it is the huge frilly lip that has led it to its popular use as a parent. It has featured as a direct parent in nearly 500 hybrids and is in the background gene pool of something like 20,000 hybrids. If ever you see a Cattleya type hybrid with a big filly edge lip, it comes from digbyana. It rarely expresses



itself as those almost hairy lip fringes of digbyana itself but instead adds an exotic frill to the edge of other large lips. (Such as in this wonderful lip of Rl digbyana x Catt. mossiae pictured above left).

Best of the Evening Hybrid – Guaricattonia Dash of Brandy 'Gem' - grown by Garrie and Lesley Bromley



Guaricattonia is one mouthful of a genus name. Obviously, the orchid is part of the "Glorious Cattleya" syndrome discussed earlier but there are two gene contributors here that we must look at a little more closely.

The 'Gua' part of Guaricattonia comes from a genus called Guarianthe, the 'catt' part represents the genus Cattleya, and the 'tonia' represents Broughtonia.

Guarianthe is a relatively new genus which was created for a small group of 4 species that had all previously been Cattleyas. The species - *skinneri*, *aurantiaca*, *patinii*, and *bowringiana*, are found from only in the area from Mexico, Central America, the Caribbean, and the top part of South America. The separation from Cattleya was made on the basis of physical differences

between them and Cattleya but has since also been confirmed by DNA studies.

There are thousands of hybrids between Guarianthe and other genera while they were Cattleyas so the separation of these 4 as Guarianthe species created a serious problem with labelling in private collections. Guarianthe *aurantiaca* has bright orange flowers and is a popular species in breeding and its own right, and likewise, Guarianthe *bowringiana* was/is equally popular. *Bowringiana* blooms with magnificent multiple flowered heads of many 10 cm deep pink to purplish flowers and is a parent in a huge number of hybrids. It is the Guarianthe in Dash of Brandy.

The second unusual genus in Guricattonia is Broughtonia. This is another small genus which is presently understood to contain 6 species, all from the Caribbean islands including the Bahamas. But because this is a little known group, and because they are an important factor in many "Cattleya" hybrids I think it is necessary to give you all a little more in-depth introduction to this curious Caribbean group.

Broughtonia species are quite different to the average Cattleya. In our May 2019 bulletin I gave a quite nice (I think) introduction to Broughtonia so I refer readers to that piece if you want a little more detail, but here are some extracts :

As you can see in the pictures below, these are small plants with a longish inflorescence and flowers clustered at the end. Somewhat reminiscent of a miniature *Laelia anceps*. Naturally, the 6 species vary widely in individual flower characteristics but all have a more or less open, flared, lip, as opposed to the tubular shape of many *Cattleyas*. The lip has been a predominant feature in cross breeding *Broughtonia* with other *Cattleya* alliance species and hybrids. The lip in a *Cattletonia* (and other *Broughtonia* intergenerics) is quite distinctive and readily noticed, even at first glance.

(pictures featuring typical plant and flower form - plant form row 1, flowers row 2)



B. ortgiesiana



B. cubensis



B. sanguinea alba



B. sanguinea



B. sanguinea – pink



B. domingensis



B. cubensis



B. negrilensis

These are relatively small plants. Tightly clustered pseudobulbs that for most species are only 5 - 6 cm tall but on at least one can get up to 12 cm. The inflorescence is typically long and skinny, leading to a cluster of flowers at its end. The plants generally grow in dry, low elevation locales. The long inflorescence can be 60 – 80 cm in some but is shorter in others. The flowers are roughly 5 cm and clustered at the end on the inflorescence. They open sequentially over months.

From my limited experience, all the *Broughtonias* like hot to warm, even, conditions with bright light and they often pass on this love for warmth to their hybrids (unfortunately). Hopefully a few more generations of breeding will at least moderate that weakness. But the spectacular *Broughtonia* lip is also strong in its influence in its hybrids. Its long inflorescence generally creates an upright tallish inflorescence but not a ridiculously long one.

One of the first *Broughtonia* hybrids was the cross between *G. bowringiana* (a *Cattleya* at the time) and *Broughtonia sanguinea* in 1956. It is now called *Guaritonias Rosy Jewel* (pic at right) but at the time it was called a *Cattletonia*. The picture at the right shows you exactly what I was saying. A slightly elongated inflorescence but also a nice tight flower cluster and an improved lip.



**Guaritonias
Rosy Jewel**

So let us look at Dash of Brandy and its parents (above). Left is *Guaricattonia Brandi*, middle is *Guaritonias Why Not* (the third is Dash of Brandy). As you can see from the 'tonia' in both parent genus names, both sides contain *Broughtonia*. Both have lovely flared lips. There are a number of awarded cultivars of Why Not and both Why Not and Brandi come in different colours so the sample pictures and patterns above can't be taken to be standard in any way. I chose these two because I like them and I like the lips. They also point nicely to where Dash of Brandy's lip comes from.

Finally, just out of interest, there are 4 species in the make-up of Dash of Brandy, although the gene pool is well stirred after 4 generations of crosses. The genealogy is 50% *Broughtonia sanguinea*, 25% *Gur. aurantiaca*, 12.5% *Gur. bowringiana*, and 12.5% *Cattleya bicolor*. It surprises me that none are “large” flowered types so you have to assume that that was deliberate by the breeders. I guess that they were looking for moderate size flowers and lots of them, with good colour and full shape, and a showy lip. I think they got it right.

Congratulations once more on a BOE Garrie and Lesley. Dash of Brandy was lovely as expected but so were those wonderful Vandaceous orchids and all the others you benched as well.

Other Worthy Benched Orchids in February



Den Fire Wings – L&P Au



Habenaria carnea – J&C Brydie



Trt. Maureen 'Hawai' - L&G Bromley



Phal Chingruey's
Goldstaff -Lina Huang



Den Fraser's Sulphur Dragon
L&G Bromley



Van Pine Rivers
Wasana-L&G Bromley



Coel Jannine Banks
Snow White-L. Huang

LIGHT Measures – Wet Finger? Or lux, Footcandles, Lumens, PAR, PPFD, etc, etc.

by Jim Brydie

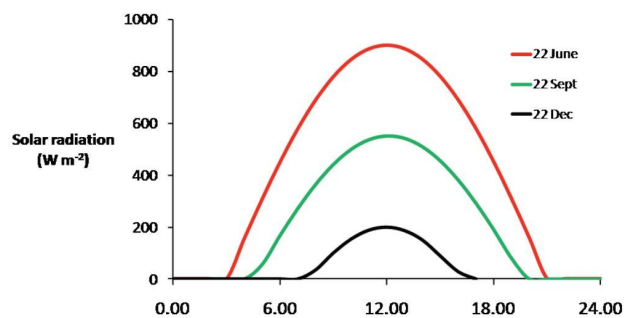
In preparing the write up for *pahalenopsis hieroglyphica* I once again came across light recommendations specified in a technical measurement such as Lux. And I suspect I am not the first among you to regularly delve into google to try to grasp a practical local interpretation of a technical light level. Have you got the hang of buying your household LED lightbulbs in Lumens yet?

Anyway, to help understand some common Lux to light level comparisons that we can equate to orchid growing, Wikipedia and other sources give us the following : Brightest sunlight -120,000 lux / bright sunlight - 111,000 lux / Shade at midday illuminated by entire clear blue sky - 20,000 lux / Midday on typical overcast day - 1000-2000 lux / typical indoor artificial lighting - 500 lux / midday on extreme of thickest storm clouds - about 200 lux.

Research for *Phal hieroglyphica* suggested a shady area around 10,000-11,000 lux. But what the average orchid grower is looking for is something more related to their existing orchid house. We generally cover our outdoor orchid houses in shade cloth. Usually 50% here in Sydney but to some extent it depends on what the grower is growing and the general local climate conditions. So if a grower was considering whether to acquire a *Phalaenopsis hieroglyphica*, they might ask themselves ‘does this new orchid need more, or less shade than my shadehouse/glasshouse’.

So let's get back to interpreting 10,000 lux. The number needs context. If full summer sunlight provides 110,000 lux, then 10,000 lux is about 1/10th of that. But those numbers don't tell us the whole story. Let us just look at the chart below and the measurement for full midday sun illumination. I am not equating the chart to lux but just look at the way solar radiation received (light) varies across the day and across the seasons.

Is the 10,000 lux meant to be the maximum exposure or perhaps the average across the day? Even if we decided it was the maximum exposure it should receive, the reality is that the amount of solar illumination from the sun in your area waxes and wanes with the seasons, and the hours of the day. Not only does day length reduce in winter, so does the amount of daylight illumination. So whatever number you choose it is meaningless by itself.



This table (at the left) is illustrated on the website of North American company Sunlightinside.com. Ignoring the specific figures or what “W m²” means, the diagram clearly indicates both the reduction in daylight AND the change in light intensity across the seasons. Sunlightinside explain it clearly in the following :

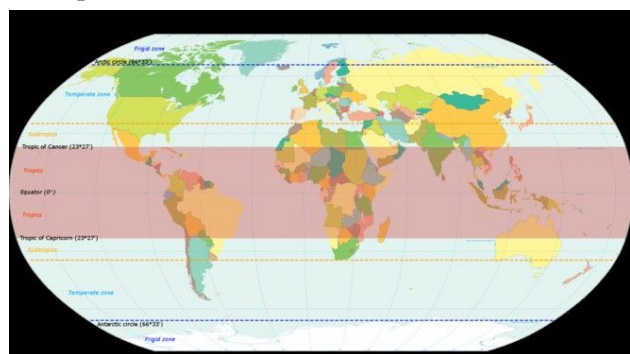
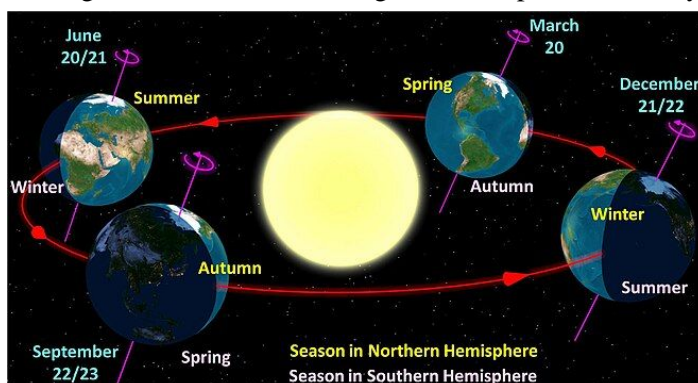
“The availability of natural light is impacted by how far north you live, with your latitude dictating both how many hours of daylight you receive in the winter and the angle of the sun in the sky (lower angles = more atmospheric filtering and less bright blue light). This makes getting enough light in the

winter especially difficult for those who live in northern climates.” [For Australia, replace “north” with “south”]

Most growers in Sydney would already know that the light a grower gets in northern Queensland is quite different to light experienced by we growers way down in Sydney or worse again in Melbourne. Sunlightinside explain the reality but why is that so?

The reason distance north/south from the equator makes a difference is all about the Earth’s orbit around the sun and the fact that the Earth’s rotational spin is tilted in relation to that orbit.

Look at this Wikipedia illustration. The earth’s north south axis is tilted slightly to the side relative to its orbit around the sun. Because of the axis tilt, during each orbit, the north hemisphere is sometimes tilted slightly closer to the sun (north hemisphere summer) and sometimes the south hemisphere is closest to the sun (south hemisphere summer).



When the tilt is at its maximum of north side tilt to the sun, the closest part of the earth to the sun is the notional circle around the earth we designate the Tropic of Cancer. If you were standing on the earth at this time of the year (ON THE TROPIC of CANCER), the sun would be directly overhead.

Similarly, in the peak of the southern hemisphere summer, the part of the earth closest to the sun is the notional orbit path we call the Tropic of Capricorn. The sun is directly overhead on the tropic of Capricorn at that time. At the two orbit points midway between those points the equator is nearest the sun.

The area of the planet between the two tropic lines are called the tropics (the pink band on the above Wikipedia map). Tropical plants therefore should be only those that come from within that pink band but I suspect mankind uses the expression more loosely to cover most rainforest areas etc.

Within those tropic zones the illumination from the sun and atmosphere is the highest it can be on Earth. The further north of south you get from there, the more atmosphere the sun’s radiation must go through to get to our lands and therefore the slightly weaker it is. Therefore your location’s latitude on Earth affects the brightness of the sun that you will experience.

Which brings us all the way back to that problem of a stated lux measure for required light for an orchid.

What a long way to get here. I must admit I have deliberately rather twisted this discussion on light measures to show that numbers alone can never be the full story and are just a comparative measure. I apologise to all the experts who quote a lux measure or whatever. It doesn’t mean they are wrong, I just used the discussion as an opportunity to more fully explain how daylight works on earth and how shade and light levels work.

Interestingly though, while we are on the subject of light and plants, there is no doubt that growers who understand plants well all grow to have a basic understanding of the needs of plants and light. A plant lover will grow indoor plants, outdoor plants, plants that need full sun and plants that demand relatively heavy shade, and by trying them out in adequate places and inadequate places they will get to observe the effects of too much light or too little light in a range of circumstances.

They will see sunburn on leaves from too much light, long skinny stems and leaves spaced further apart from too little light. Stems and leaves growing leaning towards light. Much darker leaves from too little light, yellowed leaves from too much light, and many other symptoms. An experienced and observational grower can usually just look at a plant and tell you why its failing and not just because of light. It isn’t magic. It isn’t an inborn skill, its just learned experience from seeing the same kinds of symptoms in a variety of plants over a long period of time.

If you want to learn about plants including orchids don’t be worried about a few mistakes or losses here and there, it’s part of the process. I don’t know anyone who gets it right all the time.

Humour

Archeology – A mummy was recently discovered from the ruins of a previously unrecognised pyramid in Egypt. The mummy was found covered in chocolate and nuts. Archaeologists believe it may be Pharaoh Rocher..

The Beaver and the Bride - A 90-year-old man said to his doctor, "I've never felt better. I have an 18-year-old bride who is pregnant with my child. What do you think about that?"

The doctor considered this for a minute and then said, "I have an elderly friend who is a hunter and never misses a season. One day when he was going out in a bit of a hurry, he accidentally picked up his umbrella instead of his gun. When he got to the creek, he saw a beaver sitting beside the stream. He raised his umbrella and went, 'bang, bang' and the beaver fell dead.

What do you think of that?"

The 90-year-old said, "I'd say somebody else shot that beaver."

The doctor : "My point exactly."

I may be getting old, but I can still spot safety violations. This man has no hard hat, no safety glasses, no hearing protection and no gloves!



I still don't understand why, according to the recipe, I need to set the dish at 220 degrees...



NIGERIAN MAN DIES AND AUTHORITIES FIND \$27 BILLION IN HIS APARTMENT.



HE HAD BEEN TRYING TO GIVE IT AWAY FOR 15 YEARS BUT NO ONE WOULD RETURN HIS EMAILS.

I'm gonna quit my job and travel the world until I run out of money!

I estimate I'll be home again around 10 PM this evening...

SO A NEIGHBOR KNOCKED ON MY FRONT DOOR AT 3AM... 3AM!!! LUCKILY I WAS ALREADY UP PLAYING THE BAG PIPES.

Now I've seen it all!



Air Traffic Control

"TWA 2341, for noise abatement, turn right 45 degrees."

"Centre, we are at 35,000 feet. How much noise can we make up here?"

"Sir, have you ever heard the noise a 747 makes when it hits a 727?"

--

A DC-10 had come in a little fast and thus had an exceedingly long rollout after touching down.

San Jose Tower noted: "American 751, make a hard right turn at the end of the runway, if you are able. If you are not able, take the Guadalupe exit off Highway 101, make a right at the lights and return to the airport."