



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

(Established in 1947)

A.B.N. 92 531 295 125

21<sup>st</sup> July 2025 - Volume 66 No. 7

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

**Patrons - Pauline and Trevor Onslow**

**President :** not appointed

**Committee :** Herb Schoch (Community outreach, Sales Table)

**Vice President and editor :** Jim Brydie

**Committee :** Jessie Koh (Membership Secretary / Social Events)

**Secretary :** Jenny R.

**Committee :** Stuart Ruthven

**Treasurer :** Lina Huang (and Sales Table)

**Committee :** Julie Iyengar

**Committee :** Dennys Angove

**Committee :** Adrian Zderic

**Society mail to -** PO Box 1501 Lane Cove, NSW, 1595

**Web site (active link) :** <http://kuringgaiorchidsociety.org.au>

**Society email :** kuringgaiorchidsociety@gmail.com

**facebook :** [www.facebook.com/p/Ku-Ring-Gai-Orchid-Society](https://www.facebook.com/p/Ku-Ring-Gai-Orchid-Society)

**Next Meeting : Mon 21<sup>st</sup> July 2025**

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

**COVID and even common old influenza** remain a problem. **Please, if you are feeling unwell - do not attend.**

**YOU MUST SIGN IN on the ATTENDANCE SHEETS at the front hall on arrival. – Insurance requires it. Please do it.**

**The hall is open from 6.30pm** to start set up (please help), benching can begin from 7 pm but PLEASE no benching until all the class cards and dividers are in place. Give the set up team time to get everything organized.

**Culture Class – Dora Law** is our culture speaker this month and her topic is **“What I do with my Dendrobes this time of year”**. There are many different kinds of Dendrobes and each grows according to its environmental conditions and patterns. Dora is an excellent grower of all sorts of orchids including Dendrobium. Come and learn.

**Guest Speaker** - This month, after the supper break, Jane D’Olier will present a talk about her and Peter’s **Trip to Panama**, which is a fascinating country. Mountains, lakes, tropical lowlands and the amazing engineering of “the canal”. The D’Oliers explored and looked for orchids all over. Jane is a wonderfully gifted speaker as well as being a senior orchid judge. She and Peter have explored all over the world and have some great experiences to delight us. This talk has only been delivered at one other club previously. Don’t miss it.

**The society sales table** will also be open as usual with pots, sticks and fertiliser etc and hopefully also some spare divisions of members plants. Please respect the **“Sales Table Open / Sales Table Closed” signs** and give our sales table managers time to set up and get themselves ready before you start grabbing stock and offering money.

**The Supper Break** – we request all members to bring a plate of food for the supper table (but please avoid nuts – *see below*), and bring your own mug / cup too. **Supper is not self-serve.** Volunteers are assigned to serve the food for hygienic reasons. Please volunteer to help for future meetings - fill in your name and contact details on the roster at the supper table. Basic supplies like tea, coffee, milk, etc are all organised in advance.

*(\*\* nuts reminder - as the hall is used by children in the daytime, we ask that you avoid bringing food with nuts)*

**July supper volunteers are – Liz Pyne, with Celeste and Ethan.**

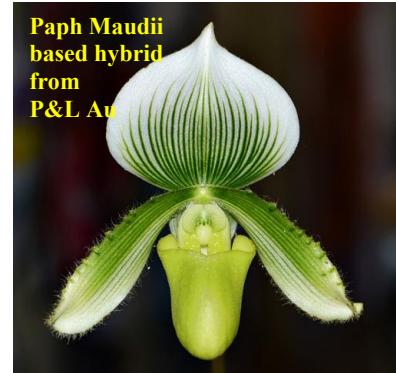
**From last meeting**



Paph wardii  
by C Rethers



Paph insigne specimen  
from D. Law



Paph Maudii  
based hybrid  
from  
P&L Au

It is surprising how our grower interest in orchids changes back and forth over generations. 60 years ago our interest in Paphs was all about more and more complex hybrids making bigger rounder flowers. Today there is a renewed interest in the original species and their simple hybrids. The centre picture shows the beginning of a lovely specimen of insigne which grows so easily in Sydney it lends itself well to making large specimens with 50 or more flowers.

The opinions and recommendations published in this bulletin are those of the authors of the various items. The Ku-Ring-Gai Orchid Society Inc disclaims responsibility for any losses or damages that may be attributed to the use or misuse of any material or any opinion published in this bulletin.

The bulletin and its content are protected by copyright and no part of them may be reproduced or re-used without the permission of the author.

**Society News** (if anyone has a news item, please phone Jim on 9476 3383, or email at [jimbrydie@aussiebroadband.com.au](mailto:jimbrydie@aussiebroadband.com.au))

**Jim's view** – Wasn't that an interesting talk by Bailey Wong last meeting. She talked about growing Catts in particular, but there was a lot of common sense involved that apply to just about all orchid growing.

Applying fertiliser regularly and at adequate levels, ensuring good light and air, awareness of temperature limitations, and managing fungal problems. She has a distinctly scientific bent to her growing, measuring the fertiliser rates with a TDS meter and checking pH, etc but there can be no argument that her processes work. I was very impressed by her story of the rescue of a Catt she had purchased that arrived with rot beginning to affect it. She did an amazing job cutting away the infected section and bringing the remainder back into active health.

She also showed us some mouth wateringly gorgeous orchids, especially specimen sized flowering Cattleyas. That requires great skill and attention to detail. Bailey was to send some notes for the bulletin about some of the products she uses and mentioned, but they are still being gathered. I will try and get them for next month. Thank you Bailey.

Trevor's talk on pot types and reasons for choosing one or the other was also very popular with members and although the subject was essentially pots there were questions from attendees spinning off in all directions. And there is nothing wrong with that - it means growers are thinking and learning. Thank you Trevor, excellent.

Our main guest speaker this month is **Jane D'Olier** about her and Peter's *trip to Panama in 2022*. They were



supposed to travel to Panama in 2019 but COVID got in their way and delayed things. Panama is renowned for its exceptional biodiversity, being at the junction between the North and South American continents, and when they finally got there they made the most of it visiting local attractions, different climatic zones and of course, searching for many, many orchids. This talk of Janes is the first of a number of presentations that will be based on that trip and you won't want to miss any of them as very few travellers venture to this part of the world. Especially when they are searching for, and photographing orchids.

And for our culture class, Dora Law, one of the up-and-coming stars of the orchid growing world, will be talking about various kinds of Dendrobiums.

The St Ives Fair is now just around the corner and I remind members that Ku-Ring-Gai are one of the 4 foundation clubs that run the fair and that we mount one of the large orchid displays. The fair involves an onerous work load, and we need the help of all our members, both in creating a display, and in helping to run the show. The benefits to the club from St Ives are substantial. Our meetings and the facilities we provide you are largely funded by our share of the earnings from the St Ives Fair each year and they enable us to be what we are. A happy family of friendly orchid growers sharing our delight in the hobby of orchids and teaching newcomers how to do it.

**SO – when those roster lists are circulating**, please find a way to offer your help in running and manning the fair.

Our 'flash sale auction' of a few of the plants from Bryan Spurrs's collection was something of a surprise last month. It certainly ran a bit longer than one might expect from a 'flash' sale, but nevertheless there will be a few more plants auctioned at the July meeting. We might just try to speed up the process a little but we are grateful to Bryan's family for making them available. I think the one that attracted a lot of bidding last month was Coelogyne lawrenceana (see the picture at the right) but they do vary in colour so not all cultivars look exactly like the picture here.

I wonder what will come up for auction this month?

It looks like a bumper meeting this month, make sure you are part of the crowd



### Some Coming events in the next few months of 2025

10-12 July – Thur-Sat (shop hrs) - Eastwood OS, Eastwood shopping centre, Rowe St, Eastwood

26 July – Sat - ANOS Sydney Auction, Federation Pavilion Castle Hill Showground

31 July - 2 August – Cumberland OS show, Grove Square Shopping Centre, Baulkham Hills

1-3 August – (Fri-Sun) Manly W. OS 'Orchids by the Sea', Super Centre, Belrose

8-10th August – (9-4 Fri, 9-3 Sat) National Orchid Extravaganza, Arena Sports Club, 140 Rookwood Rd, Yagoona

15-17th August – (9-4 Fri, Sat, 9-3 Sun) St Ives Orchid Fair – St Ives Showground, Mona Vale Rd, St Ives

### More Society News

**1. New members** – There were no new members signed up but we had visitors with us last meeting, which is a good sign. I hope our visitors enjoyed the evening and they are welcome to come along any time, and as often as they like.

**2. Name Badges** – Just a little perpetual reminder for members to please wear your name badges to meetings. No one remembers everyone else's name and having names in front of you on badges is a big help. It can actually make us brave enough to talk to one another. Try to remember your early days as new members at each club – it wasn't easy, was it? Perhaps keep your name badge it in your car with YOUR COFFEE CUP, because you need that too.

Clubs become friendly places much sooner when people talk to one another. The name badges and the suppers help.

### 3. Why we need your participation in setting up the St Ives Fair

The show is **open to the public Friday, Saturday, and Sunday** - **BUT** it is the **THURSDAY** that is **SET UP DAY**. It is the members of the 4 managing societies who spend most of Thursday setting up the two show halls.

The fair is held in two large halls (separate buildings) at the St Ives Showground on Mona Vale Rd at St Ives.

We call one hall **the Display Hall** as it is dedicated to the displays of many hundreds of all different kinds of orchids to show the public just how amazing orchids can be. Ku-Ring-Gai is one of about 8 societies that puts on a mass display and to do that we need lots of orchids. There are also smaller displays by other groups and individuals.

The second hall is **the Vendors Hall**. A large number of local and interstate orchid nurseries sell their products from pre-arranged stalls and there is a sales table for members of the 4 societies that run the show to sell excess plants.

### 4. We need your physical help in various different ways

(a) **during the 3 days it is open to the public we need Volunteers to run the fair** – eg volunteers man the ticket sales, perform security duty at the doors, security while circulating among the displays and stalls, and other duties.

Volunteer work is done in 3.5 hour shifts. You are asked to volunteer for as many shifts as you can practically manage.

Rosters for volunteer shifts at St Ives will be circulating again at our July meeting. I am asking for all members to volunteer for at least one shift, and more if you can.

We all understand that many Ku-Ring-Gai members are also members of one or more of the other 3 managing clubs (North Shore, Manly Warringah, and ANOS Warringah) and may be volunteering on those clubs volunteer rosters.

Please don't put you name down on multiple clubs for the same shift period.

But don't leave it all to the few stalwarts who work their backside off every year. Do your turn.

### 5. The Ku-Ring-gai Orchid Society Display at St Ives

\*\*\* **The following information is set out in detail in the “SIOF KOS Member Information Pack”, which is sent to members separately, - but to summarise.**

**Plants for our display - We need both flowering orchids and foliage from members.** (small foliage plants are used for decoration between the orchids and to fill spaces – no ‘non orchid’ flowering plants are allowed).

Providing orchids and foliage for our display is entirely voluntary, but please members, don't leave it all to others, we especially need your orchids. And again, while we acknowledge that many of our members also belong to other societies, and that some members may traditionally support their ‘other’ society in their displays, **can we ask even our ‘double agents’ to find a couple of plants for Ku-Ring-Gai?**

**Set up day is Thursday. We need both flowers and foliage from members AND they need to be at the display hall by 9am Thursday 14<sup>th</sup> Aug.** (to enable the team to assess the available material and to begin organising the display)

**Getting them to the show** - If you can't get your plants to the show on time, we may have some limited capacity to transport them for you but we would greatly appreciate it if you can get them there yourself.

**If you do need help to get your plants there, please phone Dennys on 043 88 77 689, to see what can be done.**

**(A) Plant preparation and condition** – All plants end up side by side in a display so plants should be clean, in good condition, and free of pests and diseases. If you aren't sure, ask a committee member for help but we would love to have them in if we can. Please attend to any clean up, staking and prep in the weeks leading up to the show.

**(B) Orchid flowers in displays will be judged for prizes** – orchids in the displays are also entered into the show classes set out in the show schedule to be distributed to members. Because orchids are separately judged in their classes, we need members supplying plants to fill in a nomination form so that we know who owns each orchid and what the orchid's name is. Both A show schedule and a nomination form will be sent to members this month.

Try to fill in the form as best you can with at least plant names and your name. We need your Nomination Form submitted to Dennys Angove by email at [dennys.angove@gmail.com](mailto:dennys.angove@gmail.com) by 6pm Tues 12<sup>th</sup> Aug. The reason we need them early is to enable us to start making the large decorative plant name cards used in the display. When the public admires the displays, the big cards help viewers identify the plants they admire. (No-one wants viewers pulling labels to get names).

**(C) Marking your plant pots - You also need to mark each pot clearly with your name or initials** so that the plant comes back to you after the show. *Most of us use small white removable paper sticky labels available from office supply stores. However, a piece of common paper masking tape is also good. Put your sticker on the back of the pot, away from where the flowers face*, and write your name or initials boldly and clearly. The display pull down process on Sunday afternoon can be a mad-house. Labelled pots help us quickly sort which plants belong to whom and help everyone get their own plants back again.

**4. Plant Sales Admin** – As described last month, members who like to sell off a few spare plants on the societies sales table at the fair, please pay special attention as there are new rules you must follow to get plants on the table.

In the last bulletin there was a letter from SIOF Sales Table Manager, Richard Blaxland, setting out the requirements.

In summary: -

I. Members who want to sell at the Fair will need to fill in a Registration Form at the June or July meeting of their Club. It is a very simple form asking for :

- Seller's name
- Seller's Identification Code (3 Capital letters that you invent as your personal identifier)
- Seller's society (any one of the 4 managing societies of which you are a member)
- Seller's bank BSB and Account number
- Seller's email address

II. Each plant you supply to the sales table MUST HAVE on it a standard yellow sales labels that you can purchase from the sales at our meeting. The label must be prepared as follows –

On one side of the tag write your code and the sales price (nothing else).

On the other side of the sales tag, you may write your name (some buyers like to see who is selling), but this is optional. Don't write on the 'curl' (where the label fastens to the plant), and don't write sideways (across the width).

III. Quality standards will be applied for plants to go on the sales table.

Plants must be securely potted. They must not have been just recently potted and yet to root properly into the pot.

Prepare your plants properly for sale – stake up untidy racemes and growths and cut off damaged leaves.

Plants should be in good condition and free of pests and diseases. These may be subjective assessments but please make sure plants to be sold are not scruffy or shabby and not be visibly diseased or infested. Any "suspect" plants will not be accepted for sale and the decision is made solely by the sales table manager. No arguments please.

When you get your plants to the Societies Sales Table at the fair, you are **not to** place them on the table yourself and remember, **sales plants cannot be accepted on site before 8am Friday.**

Table space is managed by the sales manager Richard. Please give your plants to him. (In many cases newly supplied plants may be first taken to the storage area and table stocking will be managed from there).

### Best of the evening Species – *Bulbophyllum marjohanae*?? grown by *Jean Fulcher*

What a delicious looking orchid. I have always loved these 'daisy like' Bulbos and I have quite a few gathered over many years. Whenever I saw new to me delights benched by experts like Jean, Craig Scott-Harden and others, I would find out all about it and put it away in my mind on my 'keep a look out for it' list.

I have a good memory for plants (luckily), but unluckily for me, not so good for people names and faces.

When I saw one of my 'watch for' plants for sale at an auction or at a show, I would buy it if I could and begin learning how to grow it. I failed often enough but even then I think I always learned something and I am sure you won't be surprised to hear that I believe I have a piece of majohanae lurking in the glasshouse in some corner.

HOWEVER – when I went to research the background for majohanae to write up Jean's BOE, I found that it doesn't exist??? Well, more correctly, I should say there is no such species as majohanae or a species with any other name within a bull's roar of any corruption of the letters in majohanae. A pity, because it is quite an exotic sounding name and if it actually means anything in some language it would be an excellent name for a species.

Which brings us to the question though – what is the correct name for this orchid?

Having exhausted all my own available sources for working out what it may be, I sent pictures with a query to half a dozen orchid experts in NSW, Qld, and NSW asking for help. They all confirmed majohanae is not a valid name. Most thought it was most likely a corruption of the name of another popular species - "makoyanum". Another thought that it may be a species he grows, called brevibrachyatum. Gary Yong Gee from Qld, who is one of the most noted species specialists in the country, added that the name majohanae has been in circulation in SE Qld since about 2009 and he thought they originated from the nursery - Dark Star Orchids.

Subsequently, at the Mingara orchid Fair, I spoke to the owner of Dark Star Orchids (Hans Schaible) who confirmed they came from his nursery. He told me they came from a flask he bought from a German orchid nursery, but he also

**St Ives Orchid Fair**  
**'The Big One'**

**ST IVES SHOWGROUND, Mona Vale Road, St Ives**

**Friday 15<sup>th</sup> August 2025 9 am to 4 pm**  
**Saturday 16<sup>th</sup> August 2025 9 am to 4 pm**  
**Sunday 17<sup>th</sup> August 2025 9 am to 3 pm**

**ADMISSION \$10**  
**Major Sponsors**  
**Rosella Orchids - Garden City Plastics**

**ORCHID VENDORS**  
Alice's Orchids, Barita Orchids, Dark Star Orchids, Ezi-Gro Orchids, Fong Ping Orchids, Hills District Orchids, Kings Orchid Nursery, Macquarie Native Orchids, Nicky's Slippers Orchid Care Services, Orchid Species Plus, Orchids of Distinction, Orchids on Newbold, Robertson Orchids, Rosella Orchids, The Orchid Mart / Serhan's Orchids, Tinonee Orchids, Woolf Orchidculture

*For more Information: Show Marshal: Garrie Bromley Ph: 0425 336 049 <http://www.stivesorchidfair.com/>*



said that the flask label was damaged but that his careful evaluation at the time came up with the name *marjohanae*. Hans is quite a *Bulbophyllum* specialist and since then he has flowered '*marjohanae*' himself and he doesn't think they are *makoyanum*. I am afraid I wasn't taking notes while we talked but I think he said he thought they might be even be *Bulb. lepidum* - apologies to Hans if I have misquoted him on that.

So where does this leave us? See pictures of *makoyanum*, *brevibrachyatum*, and *lepidum* below.

A first assessment of these 3 pictures might make you think that the first to rule out might be the *Bulb lepidum* because it just doesn't look like '*majohanae*' but that would be a mistake due to my presenting you with just these particular 3 pictures. If you take the trouble to check pictures of other examples of each species you will find they vary considerable within a species for colour, number of flowers, and even shape of the flower. There are certain characteristics within a species that will be consistent but colour, flower number, and width and length of sepals and petals are generally not the characters that separate species.



**Bulb makoyanum** ©-Peter-Tremain



**Bulb brevibrachyatum** (pic by John Varigos)



**Bulb lepidum**

I don't wish to get down to trying to sort what does separate these 3 and I'm not sure I could if I wanted to as I am not a botanist. But after reading, and looking at multiples of each, my personal opinion is that it is likely *makoyanum* but with an avenue left open for some later, closer examination that might decide it is *brevibrachyatum*. I don't have sufficiently detailed pictures or information to decide.

There is also a possibility it could be a hybrid but Hans tells me the flask came from a species specialist nursery so I tend to believe it is not a hybrid. In addition, I checked out every direct hybrid of *brevibrachyatum* or *makoyanum* registered before the last 10 years (for which there are pictures anyway) and didn't find any even close to our '*majohanae*'. When I find my plant in the glasshouse I am going to change the label.

But whatever it is, it is a highly desirable, and very lovely orchid. Congratulations Jean. Wonderfully grown.

PS to potential growers - these daisy like Bulbos nearly all come from tropical lowlands where it is warm all year round and the humidity is always around 85%. There are a few species a little hardier and more cool tolerant, but most need a glasshouse.

### Best of the Evening Hybrid – *Oncidium Mayfair ‘Trinity’* - grown by *Trevor & Pauline Onslow*



Trevor grows *Oncidiums* so well he makes you think it must be easy but don't be fooled. They have a distinct seasonal cycle that requires the grower to adapt skills to suit.



This hybrid has been best of the evening a few times in recent years so I won't go into the detail. For those wanting more, you can refer to our Aug 2022 bulletin, but please note that I made a typographical error in that edition by calling the orchid Trinity '*Mayfair*' instead of the other way around and also that at that time the genus was wrongly being called an *Oncidesa*.

I am probably wrong but somehow I still struggle to see how the mix of orchids

supposedly involved in the registered breeding of this hybrid could produce the orchid we see. I can only suppose that there must have been some kind of gene jump somewhere along the way but whatever happened, this cultivar has been around commercially for some time so if you would like to try it, then *Oncidium Mayfair ‘Trinity’* is what you ask for. And boy, it sure is a beautiful orchid.

Congratulations yet again Trevor. I am always amazed at how healthy and vigorous your plants are. And just look at all those leaves, let alone the flowers. Fantastic.

## Best of the Evening Novice – C. Exotic Serengeti Leopard grown by Brenda Walker



What a lovely hybrid. It is a mix of very tall orchids and miniature orchids but in both parent lines of breeding there seems to be a focus on developing spotted flowers.

One of the parents is Catt Katherine Clarkson (Mark Jones x Jungle Gem) and the other is Jungle Gem. So Exotic Serengeti Leopard is essentially a backcross of Katherine to its parent Jungle Gem.

There are only a few Cattleya species with spotted flowers and just two in the background of Katherine Clarkson. And even more unusually, those two spotty flowered lines are separated completely in the breeding right up to Katherine Clarkson. One of Katherine's parents (Mark Jones) introduces the tall Cattleya guttata and its spots, and Katherine's other parent Jungle Gem, introduces the

miniature Catt. aclandiae and its spots.

Cattleya guttata, which can grow up to 6 feet tall (180 cm), has a clustered head of up to 20 spotted flowers, each 7 – 8 cm across. Its flowers are usually a sort of green base with dark purple spots but several other colour forms exist. Some are pure green, some are some much darker, brownish purple flowered forms where the base colour appears to adopt some variance of the purple in the spots. Nearly all guttata have a pink to pinkish purple spade tipped lip. See the sample shown below.

The second spotty flowered ancestor is Catt aclandiae (from the Jungle Gem side) and this one is a dwarf plant compared to most Catts. The pseudobulbs are generally 5-15 cm tall, topped by 2 or 3 short, thick leaves. Plants grow into dense mat like clusters.



Cattleya guttata (left plant, right flower)

Cattleya aclandiae (left flower, right plant)

With the similarity of the flowers in the nature of their spotting, the colour, and the lip, I thought that these two spotted species would be closely related on the genetic tree of the Cattleyas but not so. I guess their similarity is just a case of parallel evolution.

Given that Katherine Clarkson involves up to 8 generations of crosses and something like 15 prior hybrids, it is quite curious that Katherine Clarkson's two spotty species ancestors only finally came together at Katherine.

When we look a little deeper into Brenda's orchid, it is rare for us to be told the cultivars of each parent cross used to make a new cross, but in this case we have names. I would guess it is because the plant was bought as a seedling and the cultivars were shown on the label for sales reasons, but whatever the cause, we know that Brenda's orchid was listed as Katherine Clarkson "SVO" x Jungle Gem "Yellow Candy". I have a picture of SVO but I can't find any reference to a cultivar "Yellow Candy" for Jungle Gem. That doesn't mean it doesn't exist, but even the Sunset Valley Orchids website which made Brenda's cross only mentions Jungle Gem "Yellow Jacket" and J. Gem "Very Nice" – both of which are nice yellows so I'll have to do with pictures of those as a visual reference for the Jungle Gem side



Katherine Clarkson 'SVO'

Jungle Gem 'Very Nice'

Jungle Gem 'Yellow Jacket'

J. Gem 'Luettiecke's Spots'

Apart from the spots however, there are many other species making up Katherine Clarkson. I won't go into all of them but I would like to mention two important mini contributors. The brilliant red miniature Catt. (used to be Sophronitis) coccinea and the brilliant yellow Catt. esalqueana, which used to be one of the group we called rupicolous Laelias.

The cute little esalqueana has tiny, conical pseudobulbs from 25mm to 40mm tall and flowers on a short spike carrying up to 4 or 5, 3cm buttercup yellow flowers.

Both would have been strong influencers for smaller plant size. The red from coccinea is visible in many Jungle Gem cultivars but doesn't seem too obvious in Kathleen Clarkson except perhaps for an orange tinge to some

flowers and perhaps the clear red of the spots in many cultivars. The yellow influence of the cute little ex Laelia is much more obvious and has to be the source of that colour in the flowers.

Katherine Clarkson was certainly a clever creation by Fred Clarke who first made the cross in 2008 but I believe it has been remade since.

Congratulations Brenda. I really like the smaller stature Cattleyas like this one. It should like stunning when it gets bigger and has more flowers. It's a winner and will make a magnificent specimen.

## Some other lovelies from June



**Catt unknown hybrid**  
S. Ruthven



**Brascidostele Gilded Tower**  
Dora Law



**Den. Warringah**  
Lina Huang



**Onc. Sharry baby**  
Dora Law



**Coel. unknown (=Mem W. Micholitz)**  
Jessie Koh



**Catt unknown**  
Jessie Koh



**Vanda Pakchong Blue**  
Lina Huang



**Pterostylis curta**  
Paul and Loretta Au



**Zygopetalum Debbie de Mello**  
Christine Rethers

## TDS and fertiliser rates

Jim Brydie

At the last meeting, Bailey Wong explained her processes for using a TDS meter to check the concentration rates of the fertiliser she applies to her orchids. She manages the whole process very professionally and her results are great.

I have explained TDS a few times in the past but it is a subject that makes no sense to a grower until they reach a point in their development to actually want to know about it so it needs to be repeated from time to time.

We have a number of new members join in the past year or so, and other growers expanding their knowledge and growing skills so I think now is the time to do it again.

### Types of Fertilisers and measuring how much

Before I jump into using a meter to measure fertiliser rates, I want to briefly look at fertilisers in general and the various ways the suppliers tell us to apply them.

**Different Kinds of Fertilisers** - There are quite a few different forms of fertiliser commercially available to growers. Probably the most common are the types to be added to water and then watered onto the target plants. Then there are the slow release encapsulated fertilisers like Osmocote. And third, there are others such as cow or horse manure, blood and bone, dynamic lifter (and its many very similar products), and these days, even Charlie Carp comes in bags.

**The first** mentioned types, those that are designed to be added to water, are called soluble fertilisers.

**Second**, the Slow release pellets like Osmocote are granules of soluble fertiliser coated in a resin that dissolves over time, thus releasing their fertiliser content over a set period (typically, 3 or 6 or 12 months). However the release rates on these types are affected by temperatures and the amount of water to which they are exposed.

**The third types**, like cow manure or dynamic lifter etc, are essentially a mix of fertiliser and physical material I might loosely call compost. The fertiliser component of these does eventually become soluble fertiliser as you water through the compost-like pellets but they also leave the compost behind and for epiphytes than can be a problem as it filters down into the growing medium clogging up the air flow. These fertilisers are NOT recommended for epiphytic orchids.

**Recommended Application Rates** - Soluble fertilisers should all come with a “recommended rate of application” on the packet. As soluble fertilisers are usually supplied as a powder you dissolve in water or a liquid that you mix with water. Thus the amount to be used that is written on the container, will generally be expressed in terms of how much of the powder (or the liquid) you mix with a certain volume of water.

For example, Aquasol used to be published as 4 grams of powder from the packet per 5 litres of water. The first problem for orchid growers with the packet rates is that very few labels are written to apply to epiphytic orchids.

**Orchids vs garden plants** – the rates of application on commercial fertiliser packets are all meant to apply to application to plants growing in soil in the garden. Garden plants exist in very different conditions to epiphytic orchids growing in artificial environments for an orchid fancier.

Soil is an active biome full of microscopic and macroscopic animals. Worms dig holes through the soil aerating it, and soil is structured into different layers affecting the way it works. Generally, there is an organically rich compost layer at the surface followed by various layers underneath, all of which makes an active biome including plant roots, fungi in its myriad forms, nematodes, bacteria, and much more, all living together interdependently.

The root zone of an epiphyte is also a complex biome but quite different. It is much more shallow and has very different root conditions. Water flows through an epiphyte root zone much faster and washes much of the mineral content straight through. Epiphytes don't all come from rainforests where they get wet everyday but MANY DO.

The traditional advice given newcomers is to water an orchid then allow the medium to gradually dry but then water again just before it gets too dry. If effect, aiming for the medium to swing from wet to moist to wet etc. Never fully drying out but never over wet. Not an easy balance to achieve in practice but it gives you the objective to aim for.

So what does all that mean? Do we give epiphytes more or less water and fertiliser? My interpretation is that we water orchids differently to garden plants because ‘soil’ has access to different sources of water, often from below, and soil performs a function as a reservoir of water and minerals. There is little comparative parallel to that in the root environment of an epiphyte.

Epiphytes don't need more nutrients or less nutrients than garden plants. They just need it applied slightly differently.

If a soluble fertiliser packet tells you to apply 1gm in one litre of water, once a week or once a month, that assumes there will be a residual reservoir of nutrients available at adequate levels throughout the whole period - sort of averaging out across the period. In an epiphytic orchid medium you would probably water **at least** twice as often so my inclination would be to apply the fertiliser more frequently and at a lesser rate so that the same average is achieved across the same period.

### How Do you measure rates ? -

Growers usually adopt kitchen measuring spoons graduated in milliliters for measuring out fertiliser or insecticide to mix with water. This works perfectly for liquids because liquids are always measured in mls. You can buy a full set of

kitchen measuring spoons at any of the “\$2 Shops”, with separate spoons from as little as 0.6 mls, right up to 25 mls. For larger volumes, measuring cups used in cooking are also cheap and readily available.

When equating mls to gms - 1ml of water weights one gm. However, solids such as fertiliser powders do not all weight the same per volume and it is very rare for one ml of fertiliser powder to weigh 1 gm.

In addition, we are faced with the practice of some fertiliser manufacturers supplying their own ‘Spoon’ with their pack and to list measurements only in terms of spoonfuls using their own measure with no equivalence in gms or mls.

If you don’t believe that this is a significant factor, just look at the table below, that Chris Wilson and I put together with the help of his laboratory scale. It shows how much a full, level, 5 milliliter spoon of some of the commonly available fertilizers weighs in grams.

Fertiliser Product	one level 5ml spoon = ‘?’ gms
Peters Excel /Cal/Mag Hi K (No Urea)	5.79 gms
Aquasol	3.25 gms
Thrive General Purpose	3.33 gms
Thrive Flower and Fruit	4.54 gms
Campbells Yellow	4.83 gms

Liquid fertilizers don’t present the same problem because they already recommend their rates in milliliters.

### Electronic measurement of Fertiliser Solutions –

To discuss fertilizer rates meaningfully, we need **measurable values** and there are two commonly accepted systems for mathematically expressing the relative concentration of a fertilizer solution.

The first system is the **Total Dissolved Solids (or TDS)** measure, which expresses the amount of fertilizer dissolved in the water in ‘parts per million’ (ie ppm). For example, 700 parts of fertilizer solids to 1 million parts of water.

The other commonly used measure is **Electrical Conductivity (or EC)**. This reading is expressed as a decimal number such as 0.8, or 1.0 or 1.5 etc. Both of these systems work by passing a small electric current through the water. The more mineral salts dissolved in the water, the easier the current flows through it, so they essentially measure exactly the same thing and are easily and directly convertible from one to the other.

Neither system is better than the other, they are both correct. A variety of quite cheap hand held meters are commonly sold that use one or the other of these systems.

**To convert from one system of measure to the other, an EC reading of 1.0 is the equivalent of approximately 650 parts per million Total Dissolved Solids. (the conversion rate may vary from about 640 to 660 depending on the reference book used but the difference is negligible and not worth worrying about).**

So, getting back to manufacturers recommended rates. When our society first bought a TDS meter to go with our pH meter, we measured a variety of proprietary fertilizers in parts per million at the manufacturers recommended rates.

Fertiliser Brand/Product	Manufacturers Recommended application rate	TDS reading(ppm)
Peters Excel or Cal/Mag Hi K	1 gram per litre of water	760
Aquasol	4 grams per 5 litres of water	490
Campbells Yellow	3 grams per litre of water	1640
Thrive General Purpose	8 gms per 4.5 litres of water	630
Thrive Flower and Fruit	8 gms per 4.5 litres of water	1740
Garden Party (liquid)	3 mls per litre of water	470
Fish Emulsion (liquid)	5 mls per 1 litre of water	545

You can see by these figures, that different manufacturers have vastly different ideas about appropriate concentration rates. “Half strength” of one is a lot stronger than half strength of another so I prefer to use comparable “parts per million rates” when I switch from one fertiliser to another.

So what actual TDS rates should we use? Well there is no single answer to that. At least two commercial nurseries I know, apply rates somewhere around 300 ppm every time they water the orchids. Another commercial orchid nursery applies fertiliser at 700 ppm every second watering.

Bear in mind however that all these nurseries operate very professional and sophisticated management programs watching their pH and water run off concentrations. They can make corrections exactly when necessary.

***I do not recommend fertilising with every watering.*** Unless you manage it very carefully, this can quickly lead to a build-up of salts in the pot.

The most common recommendation I have seen from experienced growers, in books, and on the internet, is to fertilise no more than every second watering, and to flush the pots with clean water in between each application of fertiliser.

Now as to the exact concentration rate to use. It depends a great deal on what you grow. In a paper written by Mr Peter Albery, a scientist friend of Alan Merriman, he suggests that mature Cymbidiums might prefer fertiliser solutions at an

EC of 1.5 to 2.0 (ie 975 to 1300 ppm). He also said that Phalaenopsis might prefer solutions below an EC of 0.75 (or 485 ppm). This tells you that the needs of different orchids are different.

In my own orchid collection, I have found that rates around 300-400 ppm every second or third watering promotes quite good growth on all plants. Regularity is the most important part. Epiphytic mediums do not have the reservoir capacity that soil has.

I am sure some of my orchids would do even better at slightly higher rates than I use, but because I grow a particularly wide range of genera, some of which are a bit touchy, I err on the safe side even if that means some plants won't achieve their full potential. For gross feeders like Cymbidiums, I try to supplement my weak soluble fertiliser with something like Dynamic Lifter or slow-release pellets directly onto the pots.

---

### **A lighter note to end the Day**

Mr Ponsonby-Smythe got a phone call from his wife, who was in a state of panic.

"George!" she sobbed. "There's a gorilla in the apple tree in the front garden!"

"A gorilla?" Mr Ponsonby-Smythe echoed. "Nonsense, woman. Have you been at the gin again?"

"No, George," she replied. "It's a real gorilla - it must have escaped from the zoo or a circus or something. It's sitting in the apple tree growling at everyone who walks past. It's just thrown an apple at Mrs Bell from No. 23!"

"Did it hit her?" Mr Ponsonby-Smythe asked, then said, "No, never mind that. I'll come home straight away."

He drove home and, sure enough, as he pulled into the driveway he saw a huge, fierce looking gorilla in the apple tree. It spotted him and growled, then threw an apple at him - he only just ducked in time.

He went into the house, where his wife was nervously looking out the window from behind the net curtain. "George, what are we going to do?" she asked.

Mr Ponsonby-Smythe picked up the Yellow Pages. "It's simple, Miriam - there are bound to be professional people who can deal with this sort of thing."

He looked up 'Gorilla Catchers' but there was only one firm listed. He dialled the number and after a few rings the phone was answered. "Bloggs and Wilson, Gorilla Catchers. Bloggs speaking!"

"Good afternoon - my name is Ponsonby-Smythe. There is a gorilla in the apple tree in my garden, and I need you to come and catch it!"

"I'm very sorry, sir," replied Bloggs. "I'm afraid Wilson is off sick at the moment, so we're unable to take on any jobs."

"But this is urgent!" said Mr Ponsonby-Smythe. "It's in the tree, causing a scene - I'm sure the property values are reducing even as we speak! There must be something you can do!"

"Well..." said Bloggs. "Catching a gorilla is a two-man job, but if you're willing to fill Wilson's role then we should be able to pull it off." - "I'll do whatever it takes," promised Mr Ponsonby-Smythe, and gave Bloggs his address.

Twenty minutes later a battered Transit van bearing the sign "BLOGGS AND WILSON - GORILLA CATCHERS" pulled up outside. The driver got out and went round to the back of the van, opened the doors, and brought out a large rifle, a set of manacles, and a vicious-looking Rottweiler dog which barked and snarled. The man came up to the front door and rang the bell.

"Good afternoon, sir. I'm Bloggs," said the man when Mr Ponsonby-Smythe answered. "I can see the gorilla in your tree - he's a big 'un, isn't he? We'd best get started right away."

"That's fine," said Mr Ponsonby-Smythe. "What do I have to do?"

"Well," replied Bloggs. "You stand there with the manacles while I climb the tree. I will wrestle with the gorilla and push him out of the tree. The instant he hits the ground, the dog is trained to leap forward and bite the gorilla's, um, ah, private parts. This is designed to distract him long enough for you to put the manacles on him. Then I can load him into the back of the van and take him away."

"I understand," said Mr Ponsonby-Smythe. "But what is the rifle for?"

"That is actually the most important part of the whole operation," replied Bloggs. "If by any chance the gorilla should happen to push *me* out of the tree, you must instantly *shoot the dog!*"

---

A man in the Scottish Highlands sees a hillwalker kneeling by the side of a burn scooping up water in his hand to quench his thirst. "Haw, min!" he shouts. "Dinna' drink oot o' there, it's fu' o' coos' keech!" (cow manure)

"I don't understand a word you're saying," replies the hillwalker. "Why on Earth can't you Scottish people learn to talk proper English?" He then turned his back on the local and bent down to get another drink.

The local man says, "sorry, pardon me, I was just saying, use both of your hands to scoop up the water - you'll get more!"