



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

(Established in 1947)
A.B.N. 92 531 295 125

September 2020 Volume 61 No. 9
Annual Membership : **\$15 single, \$18 family**

President : Dennys Angove 043 88 77 689	Committee	Jessie Koh (Membership Secretary / Social Events)
Secretary : Jenny Richardson (Culture Classes)	Committee	Herb Schoch (Liaison)
Treasurer : Lina Huang	Committee :	Pauline Onslow (Member Support)
Senior Vice President : tba	Committee :	Trevor Onslow (Guest Speakers)
Junior Vice President : tba	Committee :	Chris Wilson (Library and Reference Sources)
Editor (Hon volunteer) Jim Brydie	Committee :	Lee Payne (Sponsorship)
Society mail to - PO box 1501 Lane Cove, NSW, 1595		
Email – kuringgaiorchidsociety@gmail.com	web site (active link) :	http://kuringgaiorchidsociety.org.au

Next Meeting : * * * **September Meeting CANCELLED** (Same again folks, Corona 19 virus etc. Our committee have the situation constantly under review. You will be advised immediately as soon as there is any change.)

The world without meetings

Are you all bored and frustrated yet? Or are you just hanging on by the skin of your teeth? I am starting to think this new world will never end but I try to because I can't of any other way to go.

But I must say, at least one bright spot each month is when I see how much effort you all put into sending in your pictures and sharing something of what you know for the Virtual Benching. If you can keep going I had better keep going too and I have found a few lovely orchids from your contributions to write about yet again.

Cymbidium Hiroshima Sweet Eyes 'Pink Temptation' benched by Heather Sullivan

I don't know exactly what it is about this cute little miniature Cymbidium, but I loved it from the first time I saw it. I can't be sure of when that was but I clearly recall the occasion. It was one of those plant fairs that used to be held at Kariong every year up near Gosford. They were huge events featuring all kinds of plants and flowers, and were held on the land now occupied by the school. I used to help Berowra society put on an orchid display up there. They still have smaller plant fairs there each year (bar 2020 of course) but they are just shadows of the old fairs.

Anyway, several orchid nurseries had stalls at the fair, including Ray Clement's Tinonee orchids. On this particular year (probably in the 1990's), while Cynthia and I were wandering around once the fair had opened, I saw a row of these gorgeous pink miniature Cymbidiums for sale on his stall. Such a pretty little thing, something like a little Narella 'Jennifer Gail', which is a full size Cymbid that is still popular today. **Narella Jennifer Gail**

Hiroshima Sweet Eyes is a cross registered in 1985 by the Takaki Orchid nursery in Hiroshima, Japan. About that same period they registered a whole series of Cymbidium hybrids commencing with the "Hiroshima" name that had little to do with one another except for the breeder and registrant so don't assume other Hiroshima Cymbids are bred on the same lines. The parents of H. Sweet Eyes are Cym. Ruby Eyes (a miniature which usually has deep red flowers but there are a few pink varieties), and Cym. Sweetheart, another miniature which can be rather variable. There are pink ones, a green, a brownish yellow and a range of whites. The breeding register doesn't tell you which cultivars were used in making any cross because it is irrelevant. Once the cross is registered, all crosses of any cultivar combinations of those same parents are now called Hiroshima Sweet Eyes. But in case you haven't twigged yet, that is why some crosses get made and remade, with sometimes rather different results.

Whatever parents the Japanese nursery used they certainly got it right in my view as H. Sweet Eyes 'Pink Temptation' is a really lovely colour combination.

Curiously however, no Hiroshima Sweet Eyes have ever been awarded and I guess after all this time they never will be, despite the fact that each of the parents have been awarded many times.

No matter, Heather must like it, and I sure like it, so that all that counts. When growers of superior taste like Heather and myself pick it, it just has to be good doesn't it?. Well that's what I say anyway.



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@bigpond.com)

President Dennys' Desk – The welfare of our members has been a topic of near continual and caring discussion within our committee since the pandemic restrictions were put in place. I have indicated in each bulletin that 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. Further, if you feel you would like a more regular, personal contact through email and/or phone then we have committee members who are prepared to assist you and all you need to do is ask. I have already had some phone calls and it has been very nice to catch up with some members at a deeper personal level that I have done in the past.

Meetings and AGM – As you know, our committee has resolved that meetings will not re-commence until after the restrictions have been lifted. As the KOS Public Officer, I have communicated with NSW Fair Trading and in line with the committee's decision to delay the AGM and, NSW Fair Trading have advised quote, "*In the current COVID-19 circumstances associations no longer have to apply for extensions of time to hold their 2020 annual general meetings or submit annual summaries of financial affairs. Associations may conduct their AGM when restrictions are lifted or present 2020 financial information to members at the 2021 AGM*". As soon as restrictions are lifted we will make a decision on the date for the next AGM.

Safety Lesson – As many of you know I contracted Legionnaires disease from the unwise handling of potting mix. As a follow up, Janine mentioned this on Facebook and the number of comments that occurred was very surprising since many of our friends and family have had similar experiences over the years, some profoundly serious. I also communicated with some past work colleagues and the same revelation occurred. To cap it off, our local pharmacist also advised that there had been many cases of similar disease in our local area over the last few months. The other issue of course, is the underlying concern that covid may complicate things. So please heed the warning on the potting mix packages and take emerging respiratory illnesses seriously.

Virtual Benching – Members continue to surprise me with the variety of orchids that they grow. Thank you so much for all your contributions, especially our regulars. This issue, I went for, I am ashamed to say, cuteness and my naïve favourite was *Paph.* Fieldfare x Winston Churchill grown by Gloria and Allan Cushway. It even looks like Winston Churchill. Don't forget to send in your photos to Jenny via the KOS email address since they all add value to a well-meaning enterprise and are appreciated by so many.

Other Society News

1. This month's Feature Article – In recent months a couple of members have consulted me about one of their special orchids that seemed to be in trouble with an infection of some kind. And in my own collection I have also suddenly noticed plants that seem to have come down with the dreaded rot. I believe all those cases were caused by "summer rots" which is the exact subject of the article featured in this month's bulletin. Although they are often known as summer rots, they can actually occur at any time conditions are right. The article was written by Sue Bottom from the St Augustine Orchid Society in the USA who has kindly allowed us to preproduce it here.

2. Chris Wilson's Orchid Library Report -- The July - September 2020 issue of the Orchid Digest is new to the library. It features an image of *Masdevallia rosea* on the back cover and on the front cover, a really cute image of a tree frog in the rain keeping the leaf above it off with one foot, which relates to the article on the role of rain in pollinating some orchid flowers. Other major articles cover exploring for orchids in Madagascar and the "Sixty-fourth Paphiopedilum Guild" which shows images of orchids featured at the meeting and in talks, and outlines speakers covering Paphiopedilum, Phragmipedium and Cypripedium. Shorter articles cover how the Dracula reserve in Ecuador is helping their neighbours during Covid shutdown; Jay Pfahl in Colombia and then dealing with Covid shutdown; and a new colour form of *Vanda curvifolia*.

Don't fret, meetings will eventually recommence and wonders like this are awaiting.

Future Events please note Covid 19 safety restrictions apply at all events

Thur 10th - Sat 12th Sept – North Shore OS Show at St Ives Village shopping centre, shopping hrs.

Sat, Sun, 12,13th Sept – Wyong Orchid Show held at Royale Orchids, 70 Brieses Rd, Peats Ridge. Please see full advert on <http://www.gotoorchids.com/events/wyong-orchid-show-2020/>

Sat 24th Oct - Species Orchid Society Show and public auction. Show open 10am, auction starts 10.15am. West Pennant Hills Community Church, 41-43 Eaton Rd, West Pennant Hills. Auction catalog will be available shortly online at <https://www.orchidspeciesnsw.com.au/events>

28th & 29th Nov - Tinonee Orchid Nursery Open Day – full details at www.tinoneeorchids.com/shop/shop.html

Fishing in the rain

The rain was pouring down outside O'Connor's Irish Pub. There standing in front of a big puddle outside the pub was an old Irishman, drenched, holding a stick, with a piece of string dangling in the water. A passer-by stopped and asked him, "What are you doing?" - "Fishing", replied the old man.

Feeling sorry for the old man, the gent says, "Come in out of the rain and have a drink with me". In the warm ambiance of the pub, as they sip their whiskies the gentleman, being a bit of a superior smart ass, cannot resist asking. "So how many have you caught today?" - "You're the 8th", replied the old man.

From our August Virtual Benching - Best Red and White of the month

Congratulations to Gowan Stewart, this is one truly beautiful orchid. It is a hybrid within what we used to call the nigrohirsuite group of Denrobiums because the pseudobulbs of most of these related species are covered with short black hairs. However these days the group are just called Section Formosae after the type species for the group – Den Formosum. ‘Nigrohirsuite’ is a much more graphic and exotic name but unfortunately, not every species has the black hairs, so ‘Formosae’ it is.

It may also surprise you to hear that the name ‘Formosum’ comes from the Latin word for beautiful and does not imply that the species is based on the island of Taiwan which was previously known as Formosa.

Den. Roogkamol Vejvarut was registered in 2001 in Thailand. It is the cross between Den. Dawn Maree and the type species formosum. Dawn Maree itself is the primary hybrid between Den. formosum and Den. cruentum. Which makes Roongkamol Vejvarut 75% formosum, and 25% cruentum.

Den. formosum is not only the type species for the section but also one of the most beautiful among a whole lot of beautiful section Formosae species. It’s lovely big 12cm flowers occur in clusters of 2 to 5 along the stem, white with a good splash of gold in the upper part of the lip. The pseudobulbs aren’t oversized either, at somewhere between about 30cm and 45cm tall. Nice fleshy green stems covered with the typical black hairs of most of the group.

Formosum occurs in the foothills of the Himalayas from Nepal to Thailand and Vietnam in forests up to 1500 m elevation, although a larger flowered type known as variety giganteum occurs in NE India at lower elevations.

The colourful Den cruentum is a different kettle of fish. It comes from the west coast of Thailand in small trees at low elevations. This one is a distinctly warm grower. But the colour is its great value. The base colour of the flower is cream to green but that red in the lip is magnificent. It is not a large plant, with pseudobulbs about 35cm tall but they tend to be rather skinny and straggly and the flowers are only about 4 to 6 cm. The hybrid between formosum and cruentum was an obvious one to make and from the time it was made in 1983 Dawn Maree was hugely popular and many cultivars were awarded. Most had cream or white flowers with the expected red lip, but some had formosums yellow lip and Dawn Maree’s flowers are only about 6 to 8cm. Crossing Dawn Maree back to formosum was probably aimed at increasing the flower’s size and consolidating formosums brilliant white base colour. It is a bit early to say just yet as only 2 cultivars have been awarded but it seems they got the white they wanted but the flowers remain at around 6 to 8 cm. Still, pretty impressive isn’t it.

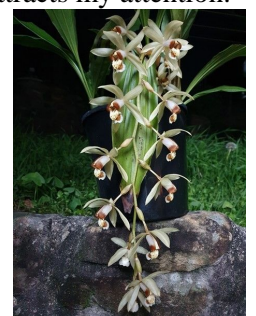
I have always found the nigrohirsuite Dendrobiums a bit tricky to grow. My shadehouse gets a bit too cold in winter and my heated glasshouse seems to provide a warm but over closed and humid atmosphere they don’t favour. Either that or I haven’t got the light or the watering right for them as yet. Still, quite a few growers grow and flower them magnificently so it is do-able. In my early days at Kuringai our patron Keith Irvine used to wow me every year with his magnificent formosanum. Trevor Onslow is growing many nigrohirsuites wonderfully these days, and I must assume Gowan does as well. I also know Veronica Clowes from OSNWS does exceptionally well with them. I take some comfort in that all those mentioned just happen to be master class growers though, so just perhaps it might not be exactly an easy task. Maybe one night when we get back to meetings we need to get one of these experts in to tell us how it’s done.

Orchids I noticed in the Virtual Benching -- Jim Brydie

As usual, I have explored a few of the orchids from the Virtual Benching in some detail, but there were many more that I really feel deserve noting. This section is where I get to tell you what it is about them that attracts my attention.

1. *Coelogyne tomentosa* benched by John O’Ryan - Back when I first began growing orchids, this beaut orchid was known as *Coelogyne massangeana* and it was one of the first orchids friendly growers gave you to expose you to easily grown species orchids. It is a lovely thing. But almost demands you grow it hanging up because when it flowers (as it does reliably every year) it produces gorgeous totally pendent 40cm inflorescences, each with about 20 (5cm) cream and brown flowers. The flowers of this one of John’s appears to have a greenish base colour which is not unknown but less common. John is growing his in a tall narrow plastic pot but I found that they displayed themselves and ‘looked nicer’ in a basket much the same as a *Stanhopea*.

These are tough, ‘largish’, very leafy orchids that seem to tolerate Sydney’s winters in a shadehouse quite well. Even when not in flower they make a nice green hanging decoration. They mostly come from Thailand and Malaysia but may also be found sparsely in Indonesia. They are usually found as epiphytes in shady

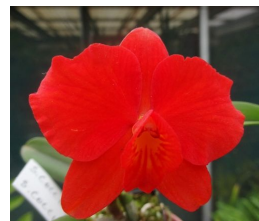


situations so you need to take that into account when growing them. This is still an orchid to recommended.

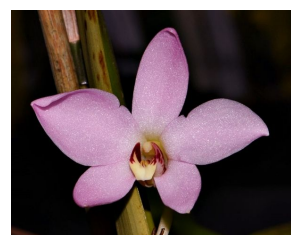
2. BLC Sylvania Fry 'Supreme' benched by Allan and Gloria Cushway - What an amazing Cattleya. This picture isn't the one Allan and Gloria gave us for the 'VB' but I wanted to show you just how good Cattleyas had become even as far back as 1966 when this one was registered. This cultivar is Sylvania Fry 'Dundas' and received its first award, an HCC for well-known Sydney grower Harold Sheaves in 1980. Two years later it got an AM, and in 2007 an FCC. Many Sylvania Frys have been awarded and 2 have achieved the top award - an FCC. Sylvania still wins shows today. Gloria and Allan are superb growers who continually show us what a superior Cattleya should look like.



3. Sophronitis (now Cattleya) coccinea benched by Trevor and Pauline Onslow – Did you ever wonder where the red comes from in most of the Cattleya family hybrids? Well this is it. What absolutely stunning colour and shape. Trevor has a keen interest in these fabulous orchids and handles them excellently. For those who would like to know about them in more detail, I published a nice exploration of the species back in 2010. It was called "*More Sophronitis, and what the heck is a Vellozia bush*". But for those who are in a hurry, I must just say that there must have been more Sophronitis killed by growers than just about any other orchid. Such a pity, as their culture is obviously perfectly achievable once you properly understand them and are prepared to go the trouble to give them what they need. Just take care, these aren't one of the 'buy it and stick it in the shade house with the others' orchids.



4. Diplocaulobium regale – benched by Peter and Jane D'Olier. I was so envious when I saw this picture, but to explain, I must tell to a story. A long time ago in a faraway land. No, wait, that is the start of a fairy story. This one starts in a North Shore O. Society meeting but it sure was a long time ago. In those day Phil Spence was a member and use to attend fairly regularly and occasionally he would bring along some amazingly exotic orchids for the sales table. I used to buy all sorts of orchids back then, to learn about them of course, and one Phil brought in was labelled Diplocaulobium sp, a treasure. I had never heard of Diplocaulobium so I reasoned that it must be rare. I grew it in my little glasshouse and researched it while I learned to grow it. - I was a little disappointed to find out that Diplocaulobiums, which are related to Dendrobiums and look a bit like them, are known as 'one day wonders', but in due course my little 'ex Phil' Diplocaulobium did flower and it was absolutely delightful. While the flowers did only last one day each, and were only about 2.5cm tall, the effect of multiple simultaneous single flowers was fantastic. Also, it flowered on and off through the season, probably due to some specific overnight temperature change trigger.

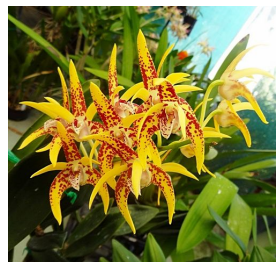


Dip tentaculum

I decided my new treasure was perhaps Dip tentaculum or possibly Dip chrysotropis and I loved it and looked for more 'Diplos'. Soon I found that Geoff Stocker in Qld had 3 of the larger flowered PNG types for sale, including regale. I bought all 3 and grew these three treasures for many years. I didn't manage to flower any of them even once and gradually my interest declined. I think I still have one species but no idea which. I must ask Peter and Jane how you do it.



5. Famous Australian native yellows from Den Speciosum – This month we had two very famous Australian native orchids 'benched'. The two I am talking about are the Den Hilda Poxon sent in by Jessie Koh and Herb Schoch (top), and then Den Avrils Gold (bottom) 'benched by Trevor and Pauline Onslow. Both of these feature Den speciosum strongly in their background so they can be relatively large and robust plants and most importantly, a little slow to reach maturity from a seedling. But if you have the patience, boy can they make a display. Well, I was just thinking about writing about them when lo and behold, I found a great article on Avril's Gold by David Butler, who was for many years a member of our society at Kuringai. How is that for serendipity.



David talks about the creation of Avril's Gold using various cultivars of speciosum, and later developments using Avrils Gold as a parent, but just for a moment I would like to go back to one of Avril's forebears – D. Hilda Poxon. Hilda was registered back in 1977. 'Hilda' is the primary hybrid between D. speciosum and D. tetragonum which accounts for Hilda's slightly spidery shape and for the red speckles that are dominant in many cultivars. It was one of the most sought after orchids of its time and is still popular today, but perhaps Hilda's main claim to fame in the future will be its part in the breeding of even more magnificent yellows like

Avril's Gold and others, and their progeny, like the beauties David tells us about.

Destperate Plea - A thief entered a house mid-afternoon and finds a man and a woman in the house. He ties up the woman and at knife-point asks the man to hand over all the jewellery and money. The man started sobbing and says: "You can take anything you want. You can kill me but please untie the rope and free her."

Thief: "Wow, you must really love your wife!" Man: "No, but she will be home shortly and this is life or death".

Recollections of *Dendrobium* Avril's Gold - David Butler

Republished with the permission of the author. Not to reproduced or republished without the author's permission

Registered in 1998, the cross (*D. Aussie Child* x *D. speciosum*) became *Dendrobium* Avril's Gold, a robust, stunning, but slow-growing native hybrid. *Dendrobium* Avril's Gold is an orchid revered by a few patient growers who like a long-term challenge but, until recently, was overlooked by most who thought they had better things to do. Availability of remakes and mericlones has seen renewed interest and popularity in the hybrid, no doubt helped along by modern growing techniques.

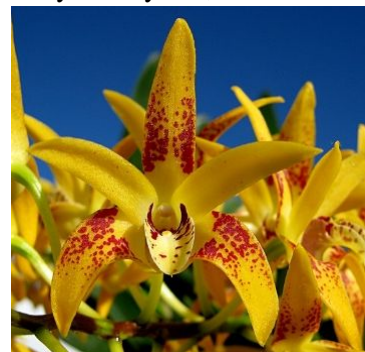
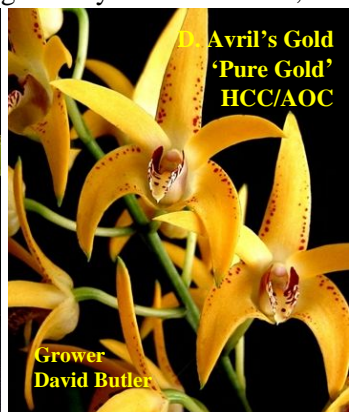
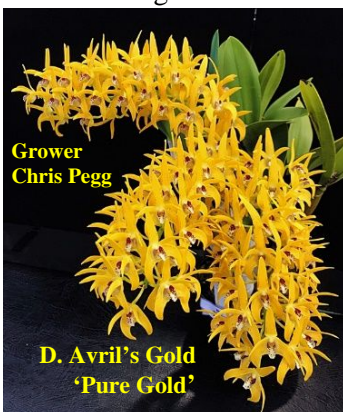
My first recollection of *Dendrobium* Avril's Gold is being at a Royale Orchids Open Day and seeing Henk van den Berg emerge from a sales area proclaiming that he had found *Dendrobium* seedlings of great potential. The cross was (*D. Aussie Child* 'Avril' x *D. speciosum* 'Windermere') and the rush which followed resulted in Bernie Fletcher and me getting as many as we could safely carry to the counter. There were no second chances! *Dendrobium* Aussie Child 'Avril' was a challenge to grow, and from my experience its seedlings were very variable in their growth rate and generally slow to mature, but in most cases the wait eventually proved worthwhile.

Dendrobium Avril's Gold was also made using *Dendrobium speciosum* 'Golden Fluke', the resulting progeny being somewhat unfairly reputed to have inferior shape. The one seedling I obtained of (*D. Aussie Child* 'Avril' x *D. speciosum* 'Golden Fluke') grew up to be called *Dendrobium* Avril's Gold 'Pure Gold', and on its first flowering was judged Champion Hybrid of an ANOS Sydney Group Spring Show. In 1998 I made the hybrid (*D. Avril's Gold* 'Pure Gold' x *D. Yondi Tina* 'Goliath') and over the years have used *Dendrobium* Avril's Gold 'Pure Gold' to make another twenty-two crosses as either the pod or pollen parent. This number included occasional remakes of my more successful crosses.

Hybridists have had success in breeding with *Dendrobium* Avril's Gold which is gaining a reputation as a frustrating, but worthwhile parent, and an important milestone in the further breeding of big yellows. It helps that most of its progeny are far less frustrating to grow than *Dendrobium* Avril's Gold itself. Now a very old hybrid, *Dendrobium* Avril's Gold continues today to have its admirers, both as a show plant and parent, thanks largely to the patience and perseverance of few keen growers some thirty years ago.

Further to the above, I think it should be stressed that the parent of *Dendrobium* Avril's Gold 'Pure Gold' was *Dendrobium speciosum* 'Golden Fluke' and that its important role in hybridising should not be overlooked. During the seventeen years 'Pure Gold' was used in my breeding program it had Neil Finch's original tag in the pot. This clearly defined it to be (*D. Aussie Child* 'Avril' x *D. speciosum* 'Golden Fluke').

Dendrobiums Cosmic Gold and Midas Touch, together with many other fine hybrids, have come from *Dendrobium* Avril's Gold 'Pure Gold' and their many outstanding achievements have certainly done old 'Golden Fluke' proud.



D. Cosmic Gold
Grower Chris Pegg



D. Cosmic Gold 'Sandy' FCC/AOC,
Grower Henk Van den Berg



D. Midas Touch
Grower Michael Drobcki

Image credits: each picture provided by the courtesy of the grower mentioned with each picture.

Zygopetalums - Yet again there were two lovely Zygopetalums in our Virtual Benching, although I use the term Zygopetalum in its widest context, much as we say ‘Cattleya’ meaning Cattleya and any hybrids within the Cattleya alliance. Similarly, in the Zygopetalum alliance there are quite a number of intergeneric hybrids that we just refer to collectively as ‘Zygos’.

Which leads me to introduce the next article from Stephen Monkhouse, Australia’s current Zygopetalum group expert. Stephen took over the famous Adelaide Orchids nursery from his father many years back. There are over 400 crosses registered by Adelaide Orchids and in more recent times most of those are “Zygo” hybrids made by Stephen, who has kindly offered to provide us with a series of article in coming months. This month we have a beginners article to encourage new starters. (JB)

GROWING ORCHIDS WITH EASE by STEPHEN MONKHOUSE ORCHIDS

The thought of starting to grow orchids should not be a scary challenge, as these are one of the easiest plant family to grow. Basically you need to find a location in your yard where plants can get filtered sunlight, and this can be next to a tree. The ideal tree is a deciduous tree so that in winter your plants will get full sunlight and in summer your plants get filter sunlight. Orchids in general like

- 1/ Filtered sunlight
- 2/ Regular fertilizer
- 3/ Good air movement
- 4/ Good quality orchid potting mixture
- 5/ Preferred to be off the ground

These are simple steps to follow. The next thing is selection and research what orchids are suited to my location. This information can be collected from a local Orchid Society or an orchid nursery near you.

In most cases depending on your location and state, Cymbidiums, Zygopetalums, and Australian Native Dendrobiums are the easiest to grow. There are of course many other orchid species and hybrids that will grow successfully in your position.

In the winter season if you happen to be in a location where frost occurs on these cold mornings then you may need to install a small shed or covering to protect your plants. (Similar to my Photo insert). Frost mainly effects smaller plants but can also burn leaves on adult plants.



Purchasing plants can be available in many different stages or plants size. If you have small they can grow much faster for you inside a place like this shed that has been lined with plastic and has a fluoro that lights up every night. The light produces some warmth and the plastic stops the warmth from escaping making a nice warm spot during winter. Summer time the plants must be removed from the shed otherwise they will burn/cook in the summer heat.

Plants can be purchase as indicated before in many different sizes, example:



Flowering Size

A Division

Advanced Seedling

50mm Tube Size

Orchid Flask

Whether you grow Cymbidiums or Zygopetalum’s they grow very similar to each other.

A Cymbidium grows from a bulb called a back bulb, from the growth eye it produces new shoots that become green bulbs and in return produce new shoots/growths until the plants consists of 3 green bulbs then in the correct season the plant will produce flower spikes.

A Zygopetalum is very similar, starting from a back bulb and produces a new growth from the eye located near the base side of the bulb, which will become a green bulb. The Zygopetalum produces about two green bulbs and then can start the flowering cycle. This genus will flower twice a year whereas the Cymbidium flowers only once a year. Another added feature in growing Zygopetalum’s is perfume. This genus adds a nice sweet perfume to your garden. Plants can be brought inside during the flowering time but once the flower has finished the plant must return outside to continue forming new growths ready for the second flowering time in about six months.

This is the first of a group of articles on Zygopetalum’s for the new growers. In future articles I will write about Hybridisation verses Tissue Culture, Show New Varieties and Breeding Trends, Talk about Markets.

Summer Rots – The Water Molds -- by Sue Bottom - St Augustine Orchid Society, Florida USA,

It is summer. The days of low humidity are gone and each day seems hotter and more humid than the last. The water molds (also known as oomycetes) thrive in this environment. Different organisms in this group of devastating plant pathogens are responsible for the Irish potato pathogens are responsible for the Irish potato famine, sudden oak death syndrome and downy mildew. In orchids, Black Rot is caused by *Phytophthora* and *Pythium*.

As Janna Beckerman of Purdue University wrote in *Greenhouse Management* magazine:

Water molds are quite possibly one of the most destructive groups of plant pathogens. At first glance, they seem very similar to fungi, and they share a lot of traits in common. Both are barely visible, spreading by fine threads called hyphae, and both produce unbelievable numbers of spores. But that is where their likeness ends. Water molds are more like algae than fungi, so the fungicides that control them aren't the same as what you would use for Fusarium wilt or powdery mildews. The key take-home here is that many fungicides that work great on true fungi, like Cleary's 3336 or Systhane, don't work on water molds...



Understanding what these disease-causing organisms are and how they live is essential to managing them and limiting their destructive potential: The website [Small Things Considered](#) provides more detail, but as the Purdue article explains:

All of the water molds have a similar lifecycle: Upon germination from thick-walled oospores, hyphae emerge to directly infect or develop into a zoosporangium, a big word that describes a swollen sac that develops at the end of a hyphal thread and releases tiny, swimming zoospores in the presence of water. These zoospores then swim to and infect plants. The zoosporangium can also germinate and infect plants directly. Upon infection, new hyphae grow into and throughout the plant, absorbing nutrients as a food source and breaking down plant tissues. These water molds then form new zoosporangia or oospores to repeat the cycle.

Symptoms. In cattleyas, the infection usually starts on the roots or basal portion of the pseudobulb, though all plant parts are susceptible. The first signs are a cream-colored discoloration that starts at the base of the pseudobulb and moves upward, followed by a dark brown to black often sharply delineated discoloration. As the infection moves up the pseudobulb, the leaves begin to yellow at the leaf axil moving toward the leaf tip, very different from the yellowing that occurs as a result of normal aging that usually begins at the leaf tip. The leaf falls from the plant with a slight jarring. The infection moves quickly along the rhizome from growth to growth. The entire plant can be consumed in a matter of days, so quick action is required.



If you see leaf yellowing, it's time to investigate, inspect the plant to find the problem.



See the creamy discoloration on the pseudobulb with the leaf yellowing to the left?



The rot on this plant is fairly advanced, time for radical surgery to remove infected tissue.

The aerial portion of the plant can also be affected, particularly during periods of extended leaf wetness during the tropical storm season. The damage caused by water molds is difficult to distinguish from the damage caused by bacterial organisms like *Erwinia*. Both types of organisms produce black, water-soaked lesions that spread rapidly, although the ooze produced by bacterial infections is quite offensive.

The water molds also cause damping off in seedlings and community pots. Small water soaked spots may start on the seedling, and plant after plant rots and dies.

Treatment. Unless the plant is valuable, the best approach is to discard it, as the disease is highly contagious and will spread from plant to plant from splashing water. If you cannot part with the plant, isolate it from your other plants, remove infected tissue with a sterile tool, and drench with a suitable fungicide like Aliette, Subdue or Banrot following label instructions. Act quickly, sanitize the plant immediately upon diagnosis to prevent the disease from spreading.



The rot moves up the pseudobulb, dissolving the plant tissue. Adjacent healthy growths are next!



It doesn't just move up the pseudobulb, it is also moving through the rhizome looking for its next target.

Prevention. You may be able to avoid radical surgery if you alter your cultural practices so as to avoid the conditions that favor the growth of the water molds. Prevention requires managing water, in that the motile spores require free water to move around and infect new plant tissue. Some suggestions:

- ★ Watering Practices – Let your plants dry completely throughout the root zone between waterings, sometimes referred to as going to a “hard dry”. This means you will be watering less frequently than you did during the low humidity spring and fall when the pots dry out so quickly. Avoid watering late in the day, better to have everything watered before noon so the leaves can dry by evening. Don't use overhead watering systems, especially for cooling.
- ★ Repotting – Avoid repotting during the high humidity summer months. Repot through the spring months, and then wait until the humidity breaks in the fall to do any last minute repotting. If you have a bifoliate cattleya in need of repotting that is throwing out new roots and you can't simply drop into a larger pot, repot it dry. Don't wet the plant or the roots before repotting, dust any cut surfaces with Banrot and then repot it, but do not water for a week or two. Let all the wounds seal over before watering. This will also encourage new root growth.
- ★ Protective Drenches – If your plants tend to get black rot every year, you might consider a monthly drench with the active ingredients Fosetyl Aluminum (trade name Aliette), Metalaxyl (trade name Subdue) or Etridiazole

(trade names Banrot, Terrazole and Truban). To help prevent the disease from getting a foothold, start in June and continue through September. (**in Australia that would be December to March)

★ Don't Overpot - Whatever mix works for your watering habits, remember that as the mix ages, salts accumulate and organic matter degrades. The mix tends to hold much more water after two or three years than it did when it was fresh. Ideally, your plant will outgrow both the mix and the pot before the time the mix is degraded and starts to hold too much moisture.

★ Tropical Storm Season – Extended periods of leaf wetness can result in bacterial rots on the aerial portions of your plants. Protective sprays with hydrogen peroxide (and the stronger Zerotel) and quaternary ammonium compounds (Consan, Physan, pool algacide like Alginox) before and after storms can help protect your plants. Copper is an excellent fungicide and bactericide, but can accumulate to toxic levels in sensitive plants, particularly dendrobiums and thin leaved orchids, so caution is advised in its use.

★ Proper Nutrition - Use dilute fertilizer solutions, say 1/8 to 1/4 strength, to help the plant grow, without growing too quickly. The form of nitrogen in the fertilizer makes a difference, ammonium and urea nitrogen tend to produce lush, soft growths while nitrogen in the nitrate form tends to form harder growths. Understand your water quality so you can select the right fertilizer, and use calcium and silicon supplements, if required.

One of the best preventatives against black rot and other diseases is growing plants with strong, hard cell walls that are more impenetrable to pathogenic organisms. This requires you to grow the healthiest and strongest plants you can, with the proper balance of light, water, air, and all the other essentials. As you maximize your culture, you will enjoy your plants more, even when not in bloom. When you are watering, really look at your plants. If you notice something is not quite right, stop what you are doing and investigate. Early intervention can prevent you from administering their last rites during the summer rot season.

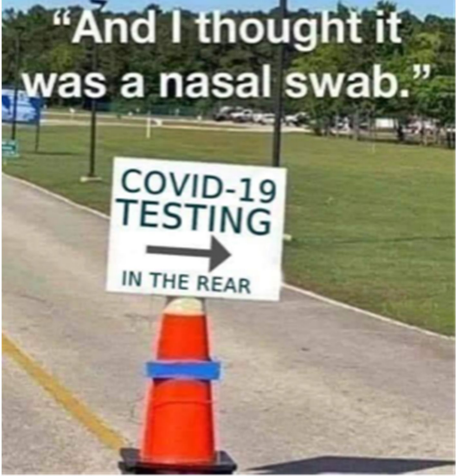
Citations and Additional Reading

Beckerman, Janna, Minding Water Molds, *Greenhouse Management*, February 5, 2013. Accessed June 26, 2020: <https://www.greenhousemag.com/article/gm0213-disease-water-molds-control/>

All contents copyright © 2020 by Sue and Terry Bottom. All rights reserved. No part of this document or the related photos may be reproduced or transmitted in any form, by any means without the prior written permission of the author. sbottom15@gmail.com

To raise your spirits in this Corona virus environment

Don't let them take the temperature on your forehead as you enter the supermarket, its a government plot to erase your memory. I went for a bottle of milk and a loaf of bread and came home with a case of beer and 12 bottles of wine!



Dendrobium beetles (reproduced with permission from Cumberland Orchid Circle)



The dendrobium beetle (*Stethopachys Formosana*) is perhaps the most destructive of orchid pests for orchid growers, particularly those growing Australian native Dendrobiums. This beetle feeds on both the leaves and the flowers of orchids and what it leaves is disfigured and unattractive.

The Dendrobium beetle is a leaf beetle of the family Chrysomelidae, which is one of the largest beetle families with approximately 3000 Australian species, at least 250 of which occur in the Sydney area. (*JB: it is now permanent in the Sydney area) Like most leaf beetles, it is colourful and both the adults and the larvae eat plant material.

The beetle is a native of Australia. It is found in the northern part of the Northern Territory, throughout Queensland, and northern New South Wales. They can also survive further south into the Sydney region in the protection of shadehouses. Their preferred food is the native Dendrobium (all species and hybrids) but will also feed on many other species of orchid (JB: Cymbid flowers, Epidendrum etc).

Life Cycle: The beetle is quite distinctive and easily identified. It is about 12mm (½”) long, similar in size to a lady beetle. They are orange in colour with 4 black spots on their wing covers that may sometimes appear to be 2 black stripes. They also have large black antenna. The adult beetle feeds on leaves, flowers, buds, and seed capsules of the orchid. They are especially efficient at destroying all the forming flower buds if not controlled.

The adult beetle lays its eggs on new growths, buds, and flowers. The eggs are very tiny, elongated and greenish cream in colour. After about 10 days the beetle larvae (left) emerges and tunnels into the new shoots, causing them to turn soggy and die. While within the cane, the larvae will grow to a length of about 10-12 mm, by which time they will have eaten out the fleshy inside of the cane.



The larvae next pupates in a mass of white waxy material similar to toothpaste before the adult emerges. The pupae case (right) is usually located at the base of the canes among the surface roots and is 10 to 20 mm long. the material it is made of looks like some kind of polystyrene foam spaghetti. The life cycle of this beetle is only a couple of months. Generally this is during the warmer months (Dec to Feb) but you will occasionally find a beetle in winter if it is mild.

Control : One method of controlling this pest is to ensure that your orchid house is sealed, preventing the beetle from getting in, but this is much easier said than done. Although the beetle is quite easily controlled with most insect sprays, the larvae is very difficult to control. Most poisons that are effective on the larvae are also toxic to yourself, the orchids, and the environment; any others will not control the larvae well. It has been said of recent times that the systemic insecticide Confidor will work but I cannot confirm this. (PS from Jim : Captan, which is only a contact spray, has also been said to kill what it hits, and the residual Captan smell supposedly also deters them for some weeks.)

Supplementary Observations by Jim Brydie : The damage done by the adult beetle is the first thing you will see. Apart from chewed flowers and buds, these powerful little chompers generally strip sections of the surface layer of leaves in a very distinctive way. They don't eat a hole right through the leaf. They eat the fleshy material off the surface leaving the woody inner layer intact, like a dead skin.

The adult beetles also have a very interesting defence mechanism that makes them easy to catch. If you put your hand (or a finger) near them they ALWAYS fold up their legs and let themselves drop. The trick is to cup one hand under them and then poke them. When they drop into your cupped hand you can drop them into a container of water to drown but I find it more satisfying to set them onto a hard surface and stomp the little sods. Oh, and please also note that adult beetles nearly always travel in pairs. If you find one, don't stop until you find the second one.

If you catch them before they lay eggs, you don't have to worry about the larvae but if you are too late, then beware that the larvae do also strip leaves. Perhaps this is before they go into the phase of burrowing into the stems. I once had a plant of *Dendrobium delicatum* being massacred on 20 or 30 leaves simultaneously. I thought it was adult beetles at first, as the larvae were so tiny I didn't even see them until the second or third day. There must have been dozens of them and they made a frightful mess before I figured out what was going on.

If the larvae get inside the stems then those stems are more or less history as you won't find the pest until they damage the stem beyond repair. The critical thing here is to make sure you don't let the cycle progress through the pupae stage. If the stems are "mushed", cut them off and put them in the bin. If you can find the critter inside then kill it. Keep a close eye on the plant and make sure you remove and destroy any pupae cases that appear, before they hatch out. The pupae cases are very distinctive and easy to find. They look like small pieces of that foam packing material we call "spaghetti" twisted together. They will be pretty well stuck to the base of the stem but they aren't that hard to remove and squash them.