COFFS HARBOUR ORCHID SOCIETY

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www.coffsorchidsociety.org.au

COFFS ORCHID NEWS – DECEMBER 2020

GENERAL MEETING & ORCHID COMPETITION

1st THURSDAY OF EACH MONTH AT 7.00 for 7.30 PM, UNLESS OTHERWISE ANNOUNCED
at NTH COAST REGIONAL BOTANIC GARDENS, HARDACRE ST, COFFS HARBOUR

DECEMBER MEETING WILL BE CHRISTMAS DINNER AT SHEARWATER

PRESIDENT:	CAROLE DAVIS	026658 1354	
VICE PRESIDENT	BOB SOUTHWELL	0417 695834	
SECRETARY:	PAIGE SINCLAIR	0427 591901	paigesinclair@me.com
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	NEIL McDONALD	0414 342978	
	JUDITH WHITING	0438 187028	
NEWSLETTER EDITOR:	BOB SOUTHWELL	0417 695834	bssouthwell@bigpond.com

SPONSORS

CFS TRAVEL

See Julie Larkey at CFS Travel, shop 27A in the plaza (opp Big W) Personalised service for all your travel needs. 6652 6555 or julie@cfstravel.com.au

LUDO'S OLD WARES

Buying and selling antiques, old wares and collectibles. Deceased estates. Ulmarra. 0402 044601

TINONEE ORCHIDS

Tinonee Orchids carries a wide variety of orchids and orchid growing supplies – coconut, pots, etc. They provide quick delivery of orders. 6553 1012 or www.tinoneeorchids.com

COFFS COAST MOTORS

For Mazda and Honda vehicles, also second-hand vehicles, and ALL your servicing needs. Do your shopping while your car is serviced. 6652 3122, 211 Pacific Highway, Coffs Harbour.

COFFS HARBOUR PRODUCE

Coffs Harbour Produce is at 26 June Street in Coffs. They carry a good range of fertilisers, insecticides and fungicides for orchids, as well as general garden needs. 6652 2599.

BRUCE HALL

Bruce provides the raffle items which are a major fundraiser at our shows.

SHEARWATER RESTAURANT

Brekkie and Modern Australian dishes in a light, upscale locale with outdoor tables and lovely views over Coffs Creek. 321 Harbour Drive. www.shearwaterreastaurant.com.au or 6651 6053.

INDEX:

1. CALENDAR:

29 Nov – Bunnings BBQ Fund Raiser
3 Dec – Christmas Dinner/ Awards
Shearwater Restaurant
11 Dec – Visit to Rosella Nursery
19 Jan – Committee Meeting
4 Feb 2021 – Monthly Meeting, CH
Botanic Gardens – 7.30pm

Quote of the Day:
"Kindness cost nothing but means everything"

2. PRESIDENT'S REPORT:

Well, what a year – not necessarily as we had anticipated in 2019 but after floods, fire, drought, what was left but pestilence!

2020 will be remembered for COVID, toilet rolls (lack of), social distancing, face masks, hand sanitisers, disruptions to our plans, lockdowns, unemployment, and lots of other negatives BUT we had entrepreneurship in our *Virtual Orchid Shows*, and in the Facebook arenas of *What's In Bloom* and the *Growing Competition*, plus our *Advisors Program* which has already had a significant uptake. I think overall that we didn't do too badly under the hitherto unforeseen (non-meeting) circumstances.

Don't forget our Bunnings BBQ on 29 November and in December we will have our get-together at Shearwater Restaurant (one of our Sponsors) for our Annual Awards and Christmas dinner. A flyer has already been circulated and we look forward to seeing as many people as possible for both events. Plus an outing has been organised for 11 December to Rosella Orchids –meet at the Botanic Gardens 9am before take-off and no permission notes needed to travel to South Grafton!

We are looking forward to reconnecting with many of our Speakers and Presenters scheduled for 2020 who are still available to give their insights and expertise at our Monthly Meetings, hopefully to recommence in February next year, together with an expanded variety of activities. Watch this space!

A special thank you to Dick and Barbara Cooper for donating the *Edward Pearce Shield* which will be awarded to the member with the *Best Species* grown at the Autumn Show. A fitting memorial indeed.

Finally – thank you to everyone for your continued support of our Society in these constrained circumstances – hard yards indeed – but 2021 holds lots of positive promises, and between now and then we have Christmas (a *Happy* one) and the New Year (a *Healthy* one).

To you all – regards and best wishes (Ho Ho Ho).

Carole Davis, President.

3. <u>FACEBOOK REPORT:</u> (Paige Sinclair)

What's in Bloom Facebook Page

In October 54 people posted photos of their plants in bloom! There were some stunning orchids, check it them out - click on this link, https://www.facebook.com/groups/891168744636259 - if you haven't already joined the group consider doing so, need help, Paige is happy to assist. At the last Committee Meeting, the names of all those who posted photos of your pretty blooms for either for yourself or someone else, went into a draw to win an orchid. The name chosen out of the bag for October 2020 was Di Blay. Congratulations Di!

The new Facebook 'Popular Orchid Photo' will start running in the New Year – stay tuned for how that will work.

Sarcochilus Growing Comp – Facebook

The fun Facebook 'Sarcochilus Growing Competition' had five members post in this comp. Which is disappointing, but I did hear that some of you intended to post, you just did not get there! Well the good news is you can do it all again at the beginning of December. To be exact December 1st to 7th – the plant with the most, likes/views/comments for that month is awarded 4 points

Congratulations to plant #5 – that plant had the most likes, comments and views at the end of the seven days. We now have a tie for leading plant, both plant number 26 and plant number 5 are sitting on 21 points in total.

Plant No#	April	May	June	July	Aug	Sep	Oct	Nov	Total
5	2	2	2	3	2	4	2	4	21
7	0	0	2	0	0	0	0	0	2
23	2	2	2	2	2	2	3	2	17
24	2	2	4	2	2	2	2	0	16
25	0	0	0	2	2	2	2	0	8
26	4	4	2	3	2	2	2	2	21
27	0	2	2	2	2	2	2	2	14
30	0	0	0	0	0	2	3	0	5
37	2	2	2	2	2	0	0	0	10
38	0	2	2	2	0	2	0	0	8
39	0	0	0	3	4	2	2	0	11
40	2	2	2	2	2	2	2	2	16
	14	18	20	23	20	22	20	12	149

Reminder, if you need help joining or posting on Facebook Paige Sinclair is available to assist, contact her via telephone 0427 59 1901 and she will either help you over the phone or visit you in person. The next window to post your Sarcochilus plant is the first 7 days of each month. Just a reminder, there are prizes for this fun group, so get posting.

4. CHOS CHRISTMAS DINNER AND AWARDS NIGHT:

CHOS Christmas Dinner will be held at Shearwater Restaurant at the Promenade, Coffs Harbour Jetty (one of our valuable Sponsors) from 5.30pm on Thursday, 3rd December. Members will be seated in small groups with appropriate distancing and limited mingling of guests. A popular vote orchid contest will be conducted by a show of hands to determine the most popular orchids. Free wine will be provided for each table. Dinner will be ordered from their standard menu.
Seating is limited but there are still a few places left so if you wish to join us for dinner on the 3rd December then please book with Bob (0417 695 834) or Paige (0427 591 901). We are looking forward to what will be one of the few group activities for 2020.

5.TRIP TO ROSELLA NURSERY:

An excursion has been organised to visit Rosella Orchid Nursery at South Grafton on Friday, 11th December from 9am. Our Activities Officer, Judith Whiting, has organised the trip and is hoping for good support from members. Rosella is a high quality commercial nursery with a wide variety of orchids but specialising in Cattleya and Vandaceous orchids. They also carry the largest stock of orchid hardware on the North Coast. Travel will be by car and members can either travel alone of join another member in a car pool.
We plan to meet at the Coffs Harbour Botanic Gardens car park from 9am and depart shortly after that time. We propose to arrive at the nursery around 10.30am and expect the visit will last 1.5 to 2 hours. The maximum allowed by the Nursery will be 15 (fifteen) persons so we comply with Covid-19 regulations. You do not have to wear masks but you may if you wish to. After a guided tour and an opportunity to purchase orchids and hardware we plan to have lunch at the Grafton Food Court at around 12.30pm. However, you may prefer to drive home from the nursery rather than proceed into Grafton for lunch.
If you would like to participate in the excursion then please book your place with Bob (0417 695 834) or Judith (0438 187 028). Places are still available.

Rosella Orchids, 95 Woolwich Road, South Grafton. 02 6643 3544

FOR YOUR 2021 ORCHID CALENDAR -

AUSTRALIAN ORCHID COUNCIL CONFERENCE AND SHOW, LOGAN, QLD. TITLED "FOR THE LOVE OF ORCHIDS'. GREAT SPEAKERS AND MANY PLANT VENDORS. DATES: 1 – 5 SEPTEMBER, 2021. THIS EVENT IS STILL ON AND WILL BE A GREAT EXPERIENCE FOR ALL ORCHID GROWERS.

MEMBERS OF CHOS INTEND BEING THERE. WHY NOT JOIN US?

Ann Deans Prosthechea cochleate – whole plant plus flower closeup.

6. SPONSORS SPOT: Shearwater Restaurant

Enjoy breakfast, lunch or dinner in a relaxed atmosphere right on the water at the Promenade, Coffs Harbour Jetty.
The Shearwater has recently undergone a revamp and is now open with a fresh look for Spring and Summer dining.
The Shearwater provides food and beverages to match their world class location. This is teamed with impeccable service from a friendly, efficient and co-operative staff.
Join us at our Christmas Dinner Meeting on 3rd December and find out what is special about eating at Shearwater.
Support our sponsor and spoil yourself by making a booking on 02 6651 6053.

7. BARK SALES:

Repotting will be continuing with most growers. The Society can provide you with quality potting bark at a reasonable price and we now stock four different grades:
* Classic – 6 to 9 mm
* Power - 9 to 12 mm
* Power Plus – 12 to 18 mm
* Super – 18 to 25 mm

These 40L bags sell for $27 each. We also have 35L bags priced at $26.
If you need supplies of bark then please contact Bob Southwell on 0417 695 834 or email to bssouthwell@bigpond.com. You can organise to pick up or Bob may be able to deliver to your house. There are only limited supplies of the small and largest sizes so get in early if you need these new sizes.

8. <u>BUNNINGS FUND RAISING BBQ:</u>

Bunnings Fund Raising Barbecue set down for Sunday, 29th November, 2020.
Bunnings have provided a new tent area which allows 5 to 6 volunteers to safely distance in three tents and carry out specified tasks during their two hour shifts. Other groups have reported that the new system works well and they were very comfortable with how it operated.

This is an important fund raising venture during a year of very little income for the Society but where the accounts still kept appearing for payment. We need volunteers for a two hour shift between 8am and 4pm. If you can help then please email, text or ring Bob Southwell on bssouthwell@bigpond.com or 0417 695 834.
If you are visiting Bunnings on the day, then please support the Society by purchasing a sausage or two.

9. <u>JOKE TIME:</u>

I picked up a hitchhiker the other day. Seemed like a nice guy but after a few miles he asked wasn't I afraid he might be a serial killer. I told him the odds of two serial killers being in the same car was very unlikely.

I was visiting my daughter the other day and I asked her if I could borrow a newspaper. She said "Dad, this is the 21st Century, we don't waste money on newspapers, here use my iPad" …. that fly didn't know what hit him.

10. <u>MONTLY HINTS:</u>

<u>Potting Bulbophyllums:</u>

Members who grow Bulbophyhllums may be interested in some hardware that is available for repotting this popular orchid group. Many Bulbo's do well if mounted on cork or tree fern slabs but others grow well in shallow pots or trays as the roots prefer shallow rather than deep layers of potting mix. Round shallow pots with numerous holes in their bases have been available for some time but members may not be aware that they are

available in four sizes (see photo below). Orchidaceous Supplies and Rosella Orchids have supplies of these listed in their catalogues.

Recently, a cheap fibre bonsai-style pot has become available for planting shallow rooted orchids such as Bulbophyllums. Orchidaceous Supplies (QLD) have these available in two sizes (see photo below).

An interesting observation has been made by Bill Thoms, who is a world authority on Bulbophyllum identification and culture. (We have his book in the Society Library).

"Bulbo's in nature grow on both horizontal tree branches and vertically on a tree trunk. The ones growing on the horizontal branch seem to trap more nutrients, light and water and do so much better than those growing vertically".
The lessons from this is that you may have greater success with your mounted plants if you hang them in a horizontal plane rather than a vertical one.

Sounds like there may be some logic in this approach and may be worth experimenting with. Probably also applies to other species as well. (Ed: I grow my *Sophronitis* (now *Cattleya*) on horizontal mounts hanging under the bench where it is cooler).

Talk to your Orchids!

Enjoy a cup of tea in their company – it can be very therapeutic. There is nothing better than on a sunny day spending time among your plants.

Famous evolutionist, Charles Darwin, later in his life, was reported to talk and sing to his Broad Beans in order to get them to grow better. Perhaps people thought he was eccentric but it is very relaxing for us and I am certain the plants respond as well. I have a cup of tea and talk to my Phalaenopsis most mornings (I don't do the singing bit as I am sure that would not be beneficial for the Phally's).

Of course, it also gives me a chance to see any problems with the plants regarding disease, pests or those that need staking or some other essential attention. So perhaps we all benefit from this interaction.

Use Proper Labels:

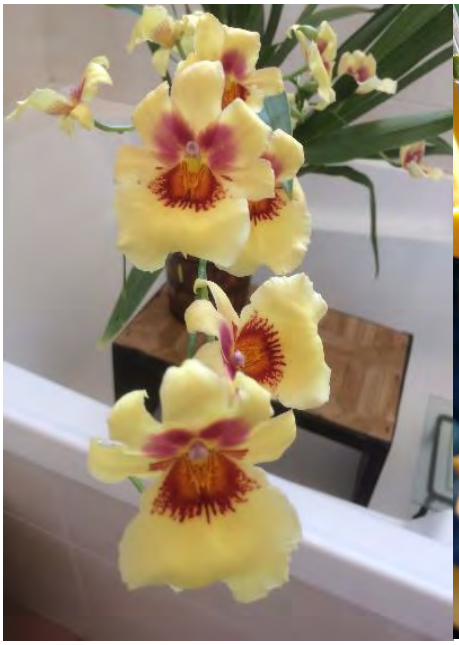
When you are repotting it is a good idea to check the state of the plant label. The writing on labels can fade over time and it is important to renew these labels so the essential information is not lost. It is essential that all orchids be labelled correctly and these labels be easy to read.

Many labels break down in the sunlight and crumble into pieces when you pull the label out of the pot. This means that little of the name can be understood. So, it is essential to replace the label before it reaches this stage and repotting is a great time to carry out this procedure.
It is worth going to the extra expense and purchasing good quality labels and not the thin, cheap ones that you may find in a $2 Shop. The best quality labels are seamless and have no joint along the surface of the label which makes it difficult to write on.
You also need to have a permanent ink pen or use 4B, 5B or 6B pencil when you write out the label. Any other grade pencil is not dark or permanent enough.

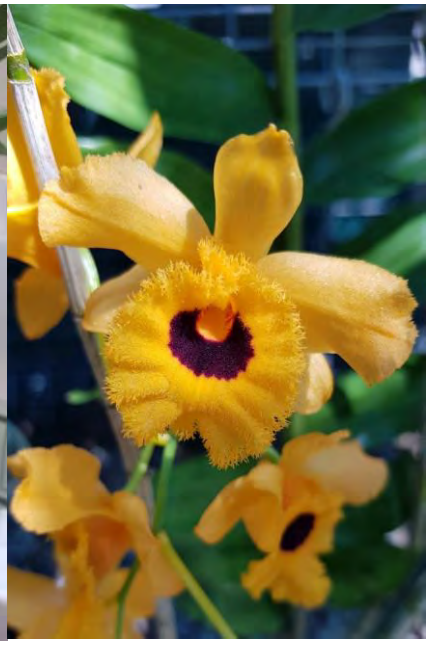
Each time you repot it is useful to record the repotting date, perhaps on the back of the label, so you don't let too much time lapse until you next repot the orchid. It may also be useful to write in shorthand where and when you purchased the orchid (Eg: TN, 6/19). (Ed: I write that info on the pointed leg of the label). Spending a short while getting the correct information on the label (Eg: Use Google for the correct spelling) will improve the value of your collection and make it easier when you present the plant for judging.

Another idea that some growers use is they tie the label to a hole in the top of the pot or the mount so it does not become separated from the plant.

Ann Dean's *Dendrobium* Aphyllum



Silesa King's Odontonia Futuresque 'Gloria'



Dendrobium fimbriatum

CHOS Membership Fees for 2021 are due from the start of February, 2021. They will continue to be $10 per member and $15 for family membership. Hopefully, we will be able to hold a general meeting in February, 2021 and the Treasurer will be happy to receive your membership payment from that time.

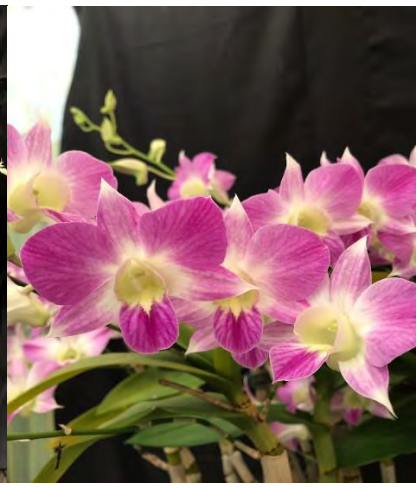
Phalaenopsis **Lianher Golden Beauty**

Dendrobium loddigesii

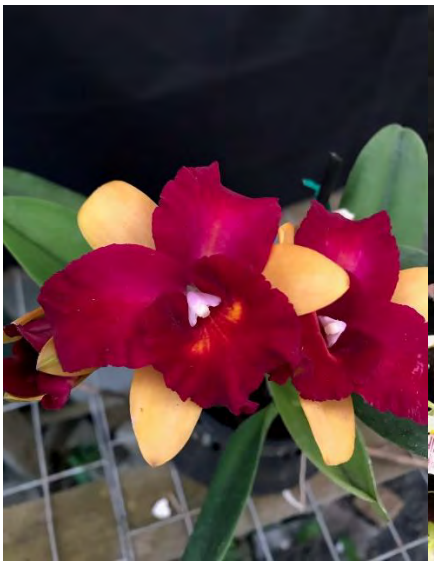
Silesa King's impressive Brassia verrucosa

Rhonda Smith – ***Den. loddigesii***

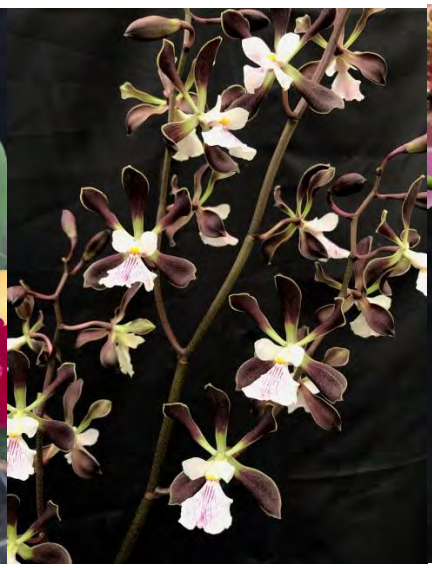
Dendrochilum curranii



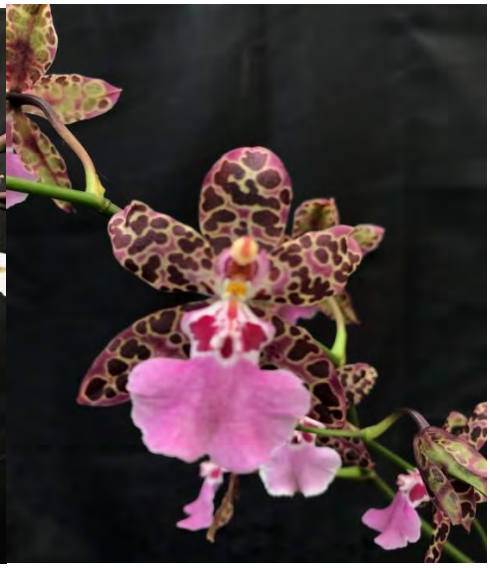
Dendrobium **Impact 'Better'**



Rhonda Smith – ***Pot*****. Chief Flora 'Spring'**



Encyclia **Bees Knees**



Miltonidium Super Spot 'Everglades'

(11) Pest & Disease Management - Part 3

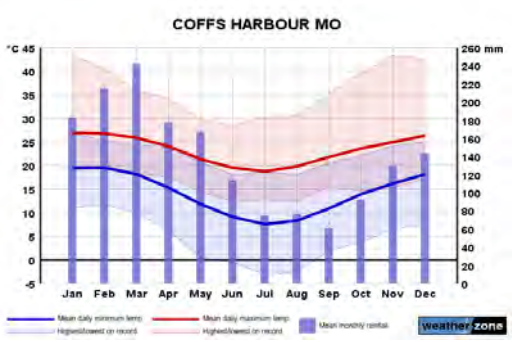
By Dick Cooper

Some introductory remarks:
In previous sections of this article, I looked at key orchid pests. There are many orchid Diseases and some injuries that orchids can suffer. To my mind there is no easy way to summarise these problems, however if you grow even a few orchids for any length of time, your plants are certainly likely to experience damage caused by one or more orchid disease(s). You may have already noticed brown or darker spots, streaks or other marks on some plants. Knowing how to diagnose and treat these orchid ailments should be important to every orchid grower. Some are caused by disease, some damage may have mysteriously occurred for other reasons.

I am afraid this coverage is quite lengthy because of the number of problems and their causes. My apologies from the outset. Although some orchids seem naturally prone to some diseases, there are ways to at least minimise the occurrence of diseases. The topics discussed fall within 4 categegories: fungal diseases, bacterial diseases, viruses and non-disease ailments.

A key starting point is to ensure there is always <u>good air movement and air renewal</u>. Cleanliness is another good habit - keep growing areas as clean and free of fallen leaves, flowers, dead or dying canes, weeds and other host plants as possible and disinfect the whole growing area occasionally. The aim being to avoid providing reservoirs of disease (and pests). Always use clean potting material and as plants are repotted ensure benches are clean and try to keep older plants separate. Since prevention is a matter of observing proper hygiene always sterilize any cutting tools after each use. Note: <u>Do not</u> make a cut to a 2nd plant with any used cutting tool.

Rainfall & Temperature/month



Varying annual climatic conditions can influence the extent of any problem. Moisture and temperature influence the growth, spread and infectious level of many pathogens. On the Coffs Coast, most rain typically falls between late January until June so, in the absence of a hard roof, your orchids will likely remain wetter for longer during this time. Excess water is a common feature in the development of some diseases, e.g. root rots and leaf-spotting fungus appear when the media or the leaves are kept wet for too long. Automatic watering/misting systems may allow excess water to settle into the crown of plants (such as Phalaenopsis and Paphiopedilums) or into flower sheaths (Cattleyas) because the leaves or sheaths prevents water from draining away. In conjunction with excess water, temperature variations during different seasons contribute to some infections - some like it hot, some prefer cool conditions.

Make a habit of regularly checking plants for signs of rot on shoots and young leaves, marks on leaves, flowers or sheaths, browning of roots and even the development of aerial shoots. I check while I fertilise, which I do by hand for this purpose. Also, monitor the local temperature and humidity and be alert for conditions favouring specific disease pathogens. Diseases such as *Botrytis*, *Colletotrichum* and *Glomerella* favour cool and damp conditions, *Pythium*, *Phytophthora*, *Erwinia*, and *Pseudomonas* favour warm conditions and high relative humidity. The preference for different temperatures means some are likely to appear at different times of the year. When conditions may exist, increase your checking frequency, be on the look out for early symptoms, and, if possible, adjust cultural practices to counter those potential diseases. (e.g. cut back on watering frequency during colder months).

Early identification can prevent movement from one to many plants. So, if you suspect symptoms, do something about it promptly, monitor the plant(s) and consider isolating it/them. This is critical because some fungal/bacterial diseases are contagious readily transferring between plants (a reason to isolate affected plant/s). Some diseases will certainly kill orchids. When you detect a disease, remove the affected tissue and some surrounding tissue too with a sterile tool, apply cinnamon, or Mancozeb paste or an appropriate fungicide and disinfect the immediate growing area with 10% bleach or pool chlorine.

Note that under watering plants may cause loss of leaves but the orchids won't wilt when dry. They can if infected. If there is a lack of water, pseudobulbs will shrivel, new growths may fail to expand properly, have accordion-like creases on some leaves or the plant may just weaken and fail to bloom.

On the other hand, over watering may produce similar symptoms but it causes the potting mix to break down more rapidly, smothering the roots with finer media or this may simply initiate root rot. Either way, the plant won't absorb enough water (or nutrients) anymore! The happy medium depends on the suitability of your mix for your immediate environment and your cultural practices. If a plant shows symptoms but you're not sure whether you're under watering or over watering, inspect the root system to find out. If the root system is in bad shape, repot the orchid, removing all the old, dead roots. If it has few roots left, spray with a hormone rooting mix (e.g. Auxinone), you may also want to raise the humidity around it to help recovery.

When a leaf begins to turn yellow it is worth investigating because this is potentially an indicator of some infection. If, however, this occurs from the distal end of the leaf it probably won't be an ailment since, in the normal course of growing, orchids do discard older leaves and create new ones.

The best course to avoid/minimise diseases is to regularly spray with preventive chemicals however some orchids are especially sensitive to some chemicals and some products can burn the leaves. As an example, based on past experience, I do not use Copper Oxychloride on soft-leaved Oncidiums - it leaves unsightly black spots the size of spray droplets.

Your health and the environment generally are also important factors to consider if you use chemicals. Sulphur and copper-based products are generally more environmentally friendly - not perfect but better than most synthetically-produced chemicals in these respects. Some of the latter can have a toxic effect on useful insects and fish. Some may be harmful to people. DO wear protective clothing, limit access to the spray area by useful insects and ensure any run-off is contained. Here are some more-friendly remedies -

* use of Sri Lankan Cinnamon. This is a good natural remedy with antifungal/antibacterial properties. It has some insecticide properties too. Being a naturally-occurring product there are has no negative side effects. I don't know which diseases do not respond.

* I use a Baking soda (bicarb) based fungicide mix for *Cercospora* (a leaf-spotting disease). I mix 3 grams of bicarb soda plus 3 mls of a botanical oil (Eco-Oil) to 1 litre of water. Do not add extra bicarb soda! Vegetable oils can be used instead of a botanical oil to which you can add a few drops of a mild dishwashing liquid as a sticker. Eco-Oil already contains a sticker and is a miticide/insecticide too.

* an Alternative Fungicide mix is 1 level teaspoon of bicarb soda to 1 litre of water, add a litre of skim milk and a pinch of Condy's Crystals and shake thoroughly before spraying. You can get Condy's Crystals from a Produce Supplier or a Pharmacy.

* Sulphur - acts as a fungicide too. Many product names include sulphur, others just include it in the product, e.g. Mancozeb Plus. Check the product labelling to determine the value as a fungicide because some forms of sulphur are better than others.

* Bordeaux mixture (a mix of copper sulphate/calcium hydroxide/water) - a long lasting spray but burns young plants and soft-leaves.

*Listerine Mouth Wash is a fungicide that may combat some orchid problems.

* the spread of some fungal diseases can be halted by using a 10% pool chlorine: water spray or a mild hydrogen peroxide: water spray (~3-5%). Also spray on any neighbouring plants. Pool Chlorine is an algaecide and it seems to be effective on rots.

For those who might prefer home remedies, is a good site is = https://firstrays.com/free-information/pests-ailments/home-remedies/.

Since chemical pesticides may still be required, so do select chemicals that are the most effective while being the least toxic and, to minimize the possibility of resistance developing in the target pathogen, it is wise to rotate sprays from different chemical classes. I use several (see below) - there are others: the labels indicate the diseases they may combat. Some may not be readily available in small quantities.

* Phosgard 620 (a phosphoric acid-based fungicide: Banrot is similar) - root rot, collar rot, crown rot, Phytophthora;
* Copper Oxychloride - Anthractnose, Bacterial Brown Spot, Black Spot, Brown Spot, Phytophthora, Botrytis, Septoria, Pseudomonas;
* Mancozeb - Anthractnose Leaf Spot, Black Spot, Botrytis, Septoria Leaf Spot, Cercospora Leaf Leaf Spot, Alterneria Leaf Spot, Pseudomonas;
* Fongarid - Root Rot, Collar Rot, Pythium, Phytophthora'
* Previcur + - Pythium and Phytopthora;
* Fungonil+ (a Chlorothalonil-500 product similar to Bravo, Daconil, Legend) - Botrytis, Septoria, Alternaria Leaf Spots, Rhizoctonia, Phytopthora, Anthracnose Black Spot, Brown Rots.

[+ - these are environmentally toxic, may irritate eyes/skin and some people may have a allergic reaction - protective clothing, breathing apparatus and eyewear are essential.]

Many fungicides work by protecting healthy plant tissues, others must be applied soon after (or before) infection for maximum benefit. None are likely to cure badly diseased plants.

Fungicides may control diseases as part of an integrated plan but they are not a replacement for good cultural practices. Healthy plants are more resistant to pests and diseases anyway. So, always make sure your potting mix is fresh, space plants well and don't overwater. From time to time, thoroughly flush all pots by watering heavily and repeat the process an hour or so later. This will flush excess salts.

Bacterial Diseases

Bacterial Soft & Brown Rot - *Pectobacterium* (syn. *Erwinia*) - Erwinia favours hot, moist conditions. Symptoms begin as small water-soaked spots on the leaves, usually surrounded by yellowish halos. If unchecked, the infection rapidly rots leaves and roots and moves into the rhizome or pseudobulbs. It smells quite unpleasant. Bulbs become soft, brown and mushy. It spreads rapidly, so affected Phalaenopsis plants may completely collapse in 2-3 days. This bacteria is an opportunistic organism often entering through wounds but may spread by water splashed on leaves. In Vandas, spots appear translucent while in Dendrobiums, the patches become black and sunken. At first, Dendrobium leaves appear yellow and water-soaked, then black and sunken. Paphiopedilum leaves develop small, round spots often near the middle of the leaf: these start out yellow and water-soaked then become reddish brown and sunken. The spot enlarges in all directions and may reach the crown eventually leaving the plant as a dark shrivelled mass.

Use sterile tools to immediately remove infected material. Spray Physan 20, 3% Hydrogen Peroxide or a copper-based fungicide (Copper Oxychloride, Mancozeb, Captan, et al but note that some Dendrobiums may be sensitive to these). During flowering, a mild hydrogen peroxide solution reportedly works as a sanitizer. Note: Physan 20 is supposed to have no human or environmental risk when used according to label instructions but it is toxic to fish! This seems to be a contradiction. Disinfect immediate growing area with 10% bleach/Pool chlorine solution and treat nearby plants too because these may be infected.

Brown Spot

Brown Spot (at Advanced Stage)

Avoid overhead watering if the disease is present. The pathogen favours hot and moist conditions, so if infection occurs, keep leaves dry, increase air circulation and reduce temperature and humidity (if possible). Periodic preventive sprays with copper compounds help to prevent infection

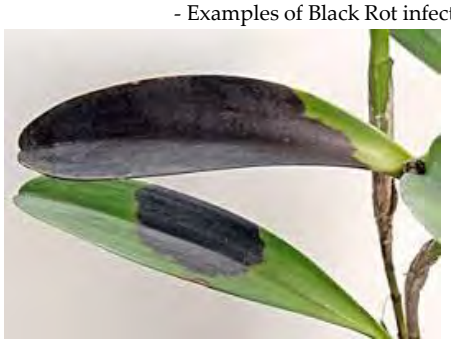
Bacterial Brown Spot - Acidovorax (syn. *Pseudomonas*) - This is a water-borne pathogen that prefers warm, moist conditions so is usually most prevalent during the warmer months. Initially it appears as a small, soft, water-soaked swelling on leaves. It is a greenish colour often with a yellow or paler green surround. The infection spreads rapidly during which time the area enlarges, coalesces and eventually turns brown or black, then becoming dried up and sunken and weeps a bacteria-laden liquid. The blister-like spots may be surrounded with a yellowish or pale green halo. With Phalaenopsis, if it enters the crown the plant will die. With Cattleyas, though rarely fatal, the infection often enters through wounds on older leaves, appearing as sunken black spots with a defined border.

Promptly cut out any damaged tissue using a sterile instrument, spray the infected and nearby plants with Physan 20, 3% Hydrogen Peroxide or a copper-based fungicide (Copper Oxychloride, Mancozeb, Captan, et al). For flowering plants apply the hydrogen peroxide remedy and disinfect the growing area with 10% bleach solution. If possible, reduce humidity, temperature and watering but increase air circulation.

<u>Bulb, Stem, And Root Orchid Diseases</u>

Black Rot - *Pythium* and *Phytophthora* - these favour wet, humid conditions, form when standing water is present on plants and spreads readily so requires immediate treatment. Often these diseases begin in the roots or rhizomes and may spread into the pseudobulbs and the leaves. Leaves then fall from the plant with limited disturbance. At first it may appear as a pale yellowish discoloration which later turns purplish-black usually with a sharply defined and discoloured central area.

- Examples of Black Rot infection -



If it is not a valuable plant, it might be easier to discard it because Black Rot is highly contagious, easily spreading via any water droplets. If the plant really is valuable, then isolate it, remove the damaged area and drench roots with a suitable fungicide Phozguard 620, Banrot or Aliette, Subdue - the hydrogen peroxide solution may be an option too. Also clean the growing area with bleach solution. If enough roots survived, the plant may regain its health. It is a good idea to avoid repotting or dividing plants in late summer. i.e. when conditions are hot and

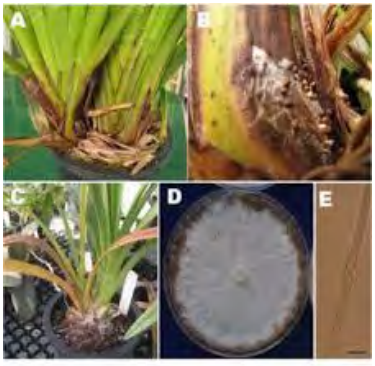
humid. *Pythium* and *Phytophthora* are best controlled through the use of a regular preventative drench (apply from December to March) and at any other time when favourable fungal conditions exist.

Fusarium - this infection enters through the plant's tissues (xylem and phloem) and blocks the flow of moisture and nutrients to the plant. Severely infected plants can die in 3-9 weeks; mildly infected plants usually undergo a steady decline over a year or more, in the process poorer flowering occurs and leaves change colour, shrivel, wilt and die.

Within some orchid genera *Fusarium* often originates from excess salt concentration, low temperatures and an overly wet mix, including too much peat moss. In the Cattleya & Oncidium Alliances, it develops in the roots or the rhizome of recently divided plants. A diagnostic symptom is that when cut, the rhizome shows an outer ring of pinkish-purple. In more serious cases, the entire rhizome turns purple with the discoloration extending into the pseudobulbs. Later sunken spots may appear on the leaves, become yellow, thin, shrivel and wrinkled or wilted and eventually die. Younger leaves may turn reddish. Inflorescences may develop sunken, rotten spots and bud drop may occur.

Fusarium originates because of improper hygiene, probably from using non-sterile cutting tools - transferring the fungus from plant to plant. One can either dispose of infected plants or remove damaged tissue and infected roots and then drench with a suitable fungicide like Daconil, Heritage (drench) or Switch (spray), Phozguard 620, Banrot or the hydrogen peroxide solution may be an option too. Alternatively stand in Fongarid do several minutes after removing all infected roots, rhizomes and pseudobulbs (showing the banding) then repot the remainder. Disinfect the growing area and cutting tools. Each time any cutting tool contacts infected tissue it must be sterilized before making a second cut.

Collar Rot, Southern Blight - *Sclerotium* - this fungus thrives during warm weather and high humidity. Good hygiene, air movement and lower temperatures may reduce the spread. Usually, a first indicator of *Sclerotium* is the rapid collapse and rotting of the roots, pseudobulbs and lower parts of the leaves. At first the tissue turns a cream-yellow then it goes brown (from invasion by secondary pathogens), collapses and rots quickly. The disease



eventually destroys the plant's entire base while infected leaves yellow, wilt and die. With Phalaenopsis, Paphiopedilums and similarly growing orchids, once this disease reaches the plant's crown, the orchid will die. On any infected tissue, a compact mass of yellow-light brown fungi will appear - it, and all other infection, should be removed using a sterile tool to avoid the rot spreading again then drench the rest of the plant with a fungicide such as Phozguard 620, Banrot or the hydrogen peroxide solution may be an option and disinfect growing area with the 10% bleach spray. It is very difficult to cure infection and is best controlled through the use of a regular preventative drench.

Brown Rot, Fungal Root Rot - *Rhizoctonia* is mainly a root disease. It develops when the potting mix breaks down resulting in poor drainage and excessive moisture retention: it can also occur when plants are over watered, roots are damaged, a salt build-up occurs or from over fertilizing. All may cause the level of *Rhizoctonia* fungus to increase. The roots die, the base of old pseudobulbs may turn brown and it can progress upwards, moving into newer bulbs, leaves become yellow and shrivel before dropping.

Remove any infected parts, thoroughly wash all of the remaining plant, repot in fresh mix and drench with a Chlorothalonil-based fungicide (Fungonil, Bravol, Daconil), Phozguard 620 or Banrot. Disinfect growing area with 10% bleach spray. Cut back on amount of water given to your plants.

Anthracnose - *Colletotrichum/Glomerella - Colletotrichum gloeosporioides* is an asexual stage of *Glomerella cingulata*. [There are other forms of this disease but it is unclear if they infect orchids.] Glomerella is active during warm, overcast and humid weather. The aerial parts of plants, mainly leaves, are affected. The leaf tips turn brown and the infection proceeds downwards. Darker patches appear, sometimes as concentric rings or as dark leaf bands which are usually sharply defined and sunken. The rest of the leaf appears normal. Raised black or brown areas may appear on flowers or on the underside of older sepals and petals, areas that may eventually be covered entirely.

Spray plants with any of a copper-based fungicide (Copper Oxychloride, Mancozeb, Captan, et al) or Physan 20, Phozguard 620, Banrot, Daconil or a Chlorothalonil fungicide. Normal sanitation, good air movement, lower temperatures (if possible) and increased light may help preclude.

Leaf Spot Diseases

There are 5 key leaf-spotting diseases, namely *Cercosporoids* (2), *Guignardia*, *Phyllosticta* and *Septoria*.

***Cercospora*:** first shows as a yellow spot on the back of the leaf which then shows as a yellow-green area leaf's top surface and then enlarges in irregular patterns, become sunken and necrotic and later turn brown or blackish.

The spots continue to enlarge in a circular or irregular pattern and may eventually cover the entire leaf. Heavily infected leaves usually fall off particularly if the infection started near it's base.

Examples of *Cercospora* infection

***Pseudocercospora*:** Depending on the *Pseudocercospora* species, leaf spots may be roughly circular and may appear purple-black with brown-black flecks forming as the spotting expands. When large sections of the upper leaf are infected leaf by some *Pseudocercospora* species numerous small irregular blemishes may appear in a mosaic pattern. The underside may show a similar pattern of infection.

***Guignardia*:** This fungus often attacks members of the Vandaceous Alliance. The first signs are small dark purple elongated wounds on either leaf surface running parallel to the veins. They can extend as either irregular streaks or diamond-shaped areas. As the infection age, the central portion become tan-coloured and raised black sporing bodies develop. Especially affects ascocentrums/other vandaceous and their hybrids. It is a sexual stage of the *Phyllosticta* fungi (see below).

Examples of Guignardia/Phyllostricta infection

Phyllosticta: Spotting from *Phyllosticta* can appear on leaves or pseudobulbs. It starts as quite small, yellow and slightly sunken spots. Over several weeks, these grow bigger, becoming more round and more sunken, especially if on the leaves. As it ages, the spots (then ~5 mm) turn tan or dark brown and have a slightly raised edging that is reddish-purple-black. Later, small dark spore structures rise in the centre. Infected leaves often fall off. Two types of spores of this fungus may be present: one can be quickly transferred by water splashes from sprinklers or other watering methods, the other fungal form is discharged into the air can be blown between plants by the wind. If they land on a moist leaf, these germinate, infect the orchid host, and begin the cycle anew. Any infection is almost impossible to eliminate and while it does not kill orchids, it will weaken them to the point where they lack the ability to defend themselves from other diseases or pests.

Septoria: At the outset, very small spots appear on the leaves. They look like sunken yellow scars which gradually develop into dark brown-black irregular or circular lesions. Infected leaves may fall off.

Septoria (Vanda leaves) >

For *Cercospora* or *Pseudocercospora* use the Bicarb + Eco-Oil mix or similar sprays. Or for any of these fungi, remove affected leaves and apply a copper-based fungicide (e.g. Copper Oxychloride, Mancozeb, Captan, et al.) or Physan 20, Phozguard 620, Banrot, Daconil or a Chlorothalonil fungicide. to the plant. Then ensure good sanitation with good air movement and reduce water to leaves. Monthly fungicide sprays should be applied.

Botrytis (or **Petal Blight**) - This disease is common in the wider environment so it can't be eradicated. It is usually found as fine light brown-black spots on flower segments, often on the back. The spots may expand until they cover the whole flower and will readily transfer to other plants. Promptly remove infected flowers. Under favourable conditions a grey fungal growth may be present.

Spray plants with a fungicide (such as Physan 20m Daconil, Banrot, Phozguard 620, a Chlorothalonil-based product OR dissolve 2.5 grams of bicarb soda to 1 litre of water and spray the plant. Good hygiene, air circulation and preventing water from standing on leaves can aid prevention.

Viruses

Last but not least of the orchid diseases are the viruses. If a virus appears in any of your plants, you have a real problem because there is no known treatment for any of them. More than 50 different orchid viruses have been reported in Australia. The most widespread of these are Orchid Fleck Virus (OFV), Odontoglossum Ringspot Virus (ORV) and Cymbidium Mosaic Virus (CMV).

Isolate the plant(s) and if the symptoms remain, it is essential that you destroy the plant. Before you do so you may want to get it tested. This can be done by posting a 10cm piece of a leaf or flower in a sealable plastic bag to Tasag Elisa, New Town Research Laboratories, 13 St. John's Ave., New Town, Tasmania 7008. A charge of about $25 applies.

Young leaves may display chlorotic markings, other leaves can show black streaks/spots/rings and sunken patches, on some orchids only the flowers reveal the presence of a virus.

Virussed Flower

ORS

OFV

It does not matter how any virus is disclosed, all are incurable. The presence of any virus disrupts normal growth, and is likely to cause weakness, distortion and malformation leaving it susceptible to further attack from other sources (pests or diseases). Viruses are transmitted by contact - by people or insects - and mites and aphids are known vectors. Perhaps Dendrobium beetles, grasshoppers and other chewing or sap-sucking insects are too. Any insect might transfer sap between plants. How can you prevent them from transferring virus if you keep a virused plant?

Transmission by people is a major cause. Be very careful when handling any of your plants. To avoid spreading viruses, always sterilize any cutting tool between plants when used to divide or cut an orchid. You need to wipe any plant matter or sap from the tool then to ensure inactivation of any virus, you must put the tool(s) into a strong solution of Tricleanium or a strong bleach solution, use a blowtorch or otherwise heat the tool(s) to a high temperature (>130º C.) after tools are dipped in alcohol, or use disposable blades throwing them away after each plant. I recommend soaking them in Tricleanium for at least 15 minutes between uses or heating the cutter surface until red hot. Hardware stores sell small butane torches which are useful for flaming cutting tools. This should be done after you remove dead leaves, old roots or when dividing an orchid. And, do not reuse old pots, stakes, potting mix, etc. unless they are sterilised properly beforehand. Two Australian articles on this topic are = https://www.fameorchids.com/index.php/viruses-in-orchids *and* https://www.cosv.com.au/orchid-viruses.

Other Issues that can harm your orchids - include Calcium deficiency, Magnesium deficiency, Cold (including Frost), Sunburn and Fertilizer Burn. The first 3 mainly speak for themselves.

Sunburn occurs if plants are receiving too much sunlight. This could be because the plant(s) are too close to the roof of your shade house or they are exposed to the sun on hot days. The photos opposite show two of my plants that I was planning to repot last December and left in the sun for too long! Once a plant becomes so overexposed that they overheat, parts of the leave die. The dark patches are the resulting damage. This is irreversible. Plants may adapt to higher levels of sunlight over time but extreme heat needs to be avoided.

Fertilizer burn results from a build up of excess salts if pots are not regularly flushed out or the mix is retained for too long. It also may occur in areas reliant on hardwater. Plants can only absorb the required amount of mineral nutrients needed at any time and as salts remaining in the mix accumulate, they will, in time, reduce plant health. Excess salts appear as a crust around pot drain holes while the affect on plants shows at the ends of leaves by turning brown as they die back.

Soft-leaved orchids are especially susceptible, i.e. oncidiums, phragmipediums, paphiopedilums, bulbophyllums, etc. Roots also die off and without the ability to provide a pathway for nutrients, the whole plant is likely to die. Recovery begins with flushing the remaining roots and completely repotting the plant. Spray it with Auxinone (or a similar hormone) to promote growth of new roots. As it starts to recover begin using a diluted fertilizer. If you were over fertilizing, the solution is to use less fertilizer!

IF USING COMMERCIAL INSECTICIDES ALWAYS FOLLOW THE LABEL INSTRUCTIONS AND OBSERVE SAFETY PRECAUTIONS. INSECTICIDES ARE POISONS AND MAY BE HAZARDOUS TO YOUR HEALTH.

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Acknowledgements: I thank Peter Hegarty, Manager, Ace Ohllson Horticultural Supplies, Woolgoolga for helpful advice regarding chemicals. I have endeavoured to refer only to least cost products that are reported to be effective for these orchid pests; other products may provide similar results.

I sourced some information and photographs from the following websites:
https://cals.arizona.edu/crop/vegetables/advisories/more/insect206.html
https://dendrobiumorchidflowers.blogspot.com/2019/05/orchid-diseases.html

https://nzacfactsheets.landcareresearch.co.nz/factsheet/InterestingInsects/Long-tailed-mealybug---Pseudococcus-longispinus.html
https://staugorchidsociety.org/culturepests-diseases.htm
https://www.aos.org/orchids/orchid-pests-diseases.aspx

SUPPLIES OF MALATHION (OR MALDISON):
It appears that it is proving difficult to obtain supplies of this chemical in small sized containers. The regular local suppliers no longer have it for sale in small amounts. Dick Cooper has advised the Society that Peter Hegarty at Ace Ohlsson, Woolgoolga can order 250ml and 500ml sized containers (It is priced at $16.50 and $28.60, respectively).
If you require Malathion then phone Peter and place an order.

Rhonda Smith – *Vanda miniatum*

***Cttna.* Maui Maid**

The Edward Pearce Memorial Shield

Merry Christmas and Happy New Year to all our readers. We hope this newsletter has managed to keep you in touch with orchid growing during 2020. This is the final newsletter for this year. The next edition will be February, 2021.
We are all looking forward to a safe and productive 2021.