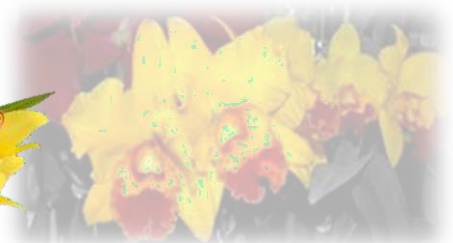




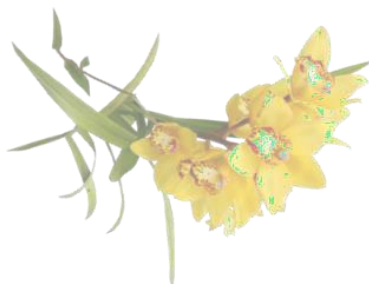
Caboolture Orchid Society Inc.

Orchid Management Guide



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Welcome to the all-absorbing passion of growing orchids. According to research, orchids have been on Earth for about a hundred million years and have been very successful at spreading themselves across the planet with species found on almost every continent.

Because of their wide range of habitats, orchids can vary significantly in appearance, although their basic structure remains the same in terms of reproduction and flower parts. These separate them from most other flowering plants. Orchids can be grouped into epiphytes, lithophytes, and terrestrial types according to how they have adapted to their habitat.

Taxonomy for orchids:

All orchids belong to the family Orchidaceae. This family is divided into five sub-families. These sub-families are then further divided into tribes, which are in turn divided into sub-tribes. Sub-tribes are divided into genera, which are finally divided into subgenera.

Orchids that have been created by mother nature are known as species orchids. Species orchids have two names. The genus name always comes first and is followed by the species name. Species is the basic unit of plant classification, usually consisting of individuals that are fairly uniform in character and breed freely with one another over many generations without any obvious changes to the progeny.

Orchids that have been developed by humans by cross pollination are called hybrids. Please refer to the section on labelling so you can easily identify which type you are growing or purchasing.

Common types of Orchids

There are species and hybrids within these genera.



Cattleya



Dendrobium



Cymbidium



Oncidium



Paphiopedilum



Vanda



Phalaenopsis

Membership Information for COS members

Welcome also to our Caboolture Orchid Society (COS). Orchid clubs or societies are a great place to learn and mingle with people who share your passion, and great sources of quality orchids.

This handbook is designed to give an insight to the structure and function of our society and to share with you information and culture hints gleaned from our long-time orchid growers.

As with any society, there is a hierarchy developed to offer guidance and support. In Caboolture, we are part of a territory supported by STOCQ (Sub Tropical Orchid Council of Queensland Inc.) We have neighbouring societies south of Caboolture that have a different support structure. Our activities are aligned with those in STOCQ although some of our members also belong to societies that cross these regional territories.

Most orchid societies, including us, have both a website and a Facebook site. While our website is under development again, our Facebook site is active. As a member you are welcome to join our Facebook site and post your questions, your orchid research and photos of your orchids on our site.

Your First Meeting at COS

Our society has 1 general monthly meeting held each third Friday of the month at 1.00pm at the Combined Services Hall Hayes Street Caboolture. Members are welcome to attend this meeting.

Each meeting generally lasts about 2 hours and includes some general business, some updates, raffles, a lucky door prize, orchid judging and providing feedback on benched orchids and an information presentation on aspects of orchid care. We also have a monthly management committee meeting where the business processes are discussed, and decisions of our Society are made. Members are free to attend but have no voting rights at this meeting.

At the first general meeting of the Caboolture Orchid Society that you attend after your membership has been approved, you will be introduced to members and be given a new member's kit. As you arrive at each meeting, we request that you sign the attendance register for insurance purposes and when necessary, follow COVID procedures, logging in using our Check in Queensland signage.

It is important to read the information provided which will include a precis that establishes your COS membership number. Your membership number is important if you wish to bench (show) orchids in any open or novice sections at each meeting.

Our society caters for 2 growers' groups in our orchid development- Novice and Open.

A novice grower is defined as a grower who has: -

- a) been growing orchids for a short time.
- b) has limited experience with growing orchids, and

c) has not won a first prize in any competition orchid show, display, or competition conducted by any recognized orchid society, whether or not affiliated with the controlling state body. Your novice status lasts for one year or until the grower gains first place in any open competition, whichever comes first.



The Novice grower moves to the **Open section** of growers in our society with the following criteria:

- 1 You have been a financial member for one year.
- 2 You have won first place at any open show.
- 3 You have won the aggregate score for the novice section for the year.
- 4 You decide to move to the open section of your own accord.

Note: If a novice grower wins first place (blue ribbon) at any show, he or she immediately loses novice status. This means that they must display in the open section at either the Sub Tropical Orchid Society (STOCQ) or any other show outside the STOCQ area but are permitted to remain in the novice section at our Cultural meetings until 30th June of the current year.

If as a novice, you wish to bench orchids at shows, please follow the rules and requirements for all growers which are clearly defined in the sections below [Benching your Orchids](#) , [Orchid Labelling](#) and in the COS Show Schedule.

Use your time as a novice wisely and the following is suggested to build your confidence and your knowledge:

- Attending all meetings, particularly where there is a guest speaker.
- Bench lots of orchids. If you don't succeed, try again, but ask why you failed. Remember that one mistake is called a learning experience.
- Ask lots of questions, particularly of experienced growers.
- Take careful note of orchids benched in the open section and again, ask lots of questions.
- Stick to the basics but remember old wise growers use lots of tricks to enhance presentation. Most are happy to share that information if you ask.



Benching your orchids at a meeting.

Why bench your orchids?

Benching involves bringing an orchid that you have been growing for 6 months and putting it on the benching table as you come in. Having the courage to do this lets you see how your orchids and your care of them compares to those of other growers. It allows you to discuss with experienced growers what you do and how you do it, and to listen to their advice and experienced tips to improve your orchid culture. In addition, the judges involved often provide feedback during and after judging on how to show them to their best advantage.

Points system for benching your orchids. There is a points system within our society for those who bench their orchids at our cultural meetings.

1st – 3 points

2nd - 2 points

3rd – 1 point

These points accumulate throughout the financial year (1st July to 30th June) and trophy awards are then presented at our Annual General Meeting in August each year.

There are several protocols involved in benching your orchids.

You will find that a great deal is written about the method of benching orchids at shows, however, little information is provided on judging requirements, particularly if you intend to bench your orchids as a novice at meetings of the Caboolture Orchid Society. (COS). In most cases you will learn by your mistakes, however many of our growers are very willing to pass on their knowledge. The difficulty is that they do not know your level of expertise and can only help if you ask questions.

There are 3 elements, not related to the quality of the orchid, that you should follow when benching an orchid. They are:

- Orchids to be benched must be owned by the member for at least 6 months. However, a plant may be displayed and marked as “not for judging” if it doesn’t meet this criterion.
- Try to ensure your orchid is correctly named. If you don’t know the name of a plant, write ‘unknown’ on the tag. If you are aware of the name or names of your orchid, ensure they are written clearly and spelled correctly.
- Ensure your membership number (pot number) is clearly visible on your pot or tag. Judges look at many orchids during a meeting and to ensure your orchid remains anonymous, only your membership number is displayed on your orchid.

The tag on the right is placed in the pot and contains your membership number.

The number can be written on the label with a good quality pencil, e.g.a 6B or an 8008 Stabilo. A permanent felt pen can be used, but in time, it will fade, and you may lose the pot number on your label and the name of your orchid.



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Orchid Labelling

An important part of growing orchids is the correct labelling of your plants. As mentioned above, when benching or showing your orchid at a meeting, we need to ensure the orchid is correctly labelled. Orchids are one of the only plants that have had their breeding registrations kept up to date from the beginning of orchid collecting in the latter part of the eighteen hundreds. Each year we have at least one session at a cultural meeting to revise our labelling knowledge. It is important that if the Labeller or scribe lets you know that your label is incorrect, that you make every effort to write a new label accurately.

Species Label

Once a label is lost, it is almost impossible to identify a plant unless it is a species. As members of STOCQ, writing a species label for yourself should be done with a capital letter in Italics at the beginning of the species word and the balance in lower case italics. The name of the orchid is also written in lower case as shown below:



Dendrobium bigibbum

Hybrid Label

Hybrid labels are written with a capital letter and regular font for the start of each part of the name just as you would a person's name.



Dendrobium Mousmee

Hybrids with a variety name (cultivar name) should be written in regular font with a capital letter at the beginning of each word and the balance in lower case. Single quote marks are inserted around the cultivar name.



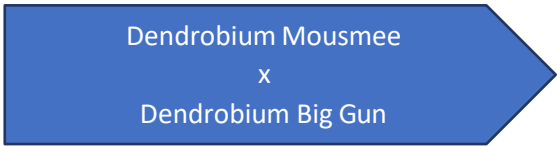
Dendrobium Mousmee 'Dorray'

If the plant has won an award, the award is written beside the name of the orchid as shown:



Dendrobium Mousmee 'Dorray' HCC/AOC

The orchid label of an unregistered cross is written as shown:



Dendrobium Mousmee
x
Dendrobium Big Gun

Labels for our mini- show and benching at other shows are printed by yourself, using the relevant format above. Usually, the label is a piece of rectangular cardboard approx. 9cm long by 3 cm wide. For these shows, only put the orchid genera and name on the label. (**No variety names**) These labels are placed in a special peg and inserted into the pot in addition to your own label.



Dendrobium bigibbum

NB For our mini-shows, to identify the owner of the plant you will need to add a sticker with your pot number to the front of the label as well. For other shows, you would ask on entry for an exhibitor's number and that society will give you a sticker to write this new number on before you stick it to the front of the label.

Labels for our winter show are typed and distributed by the COS labeller.

Presenting your orchids for judging at our meetings and mini -shows

In addition to the labelling process involved in benching your orchids, orchid growers also need to prepare their orchids in readiness.

There are several technical judging requirements when you consider benching orchids which include:

- 1 The quality of the orchid
- 2 Presenting the orchid in its best light for judging
- 3 Staking orchids for presentation.

1 The quality of the orchid

As a novice, it is best to understand some of the basic requirements first and worry about absolute perfection later. Judges not only look at clarity of colour, quality, consistency in shape, habit (well grown and well displayed), substance (strength of the flower and segments themselves), but against standards expected for that type of orchid when judging its quality. At meetings, our judges usually give feedback about the best elements of the awarded plants in each section. Listening to the feedback also helps develop your own checklist about how to best present your own orchids.

From a novice's point of view, stick to the basics and, equally importantly, if your orchid does not win a prize ask the judge or one of the senior members to advise you what elements can be improved.

You may make mistakes. It is best, however, to make a mistake only once and each time you are provided with advice, your understanding of the orchid will improve.

The photo on the right shows an orchid with few flaws which would be well worth benching.

Rlc. Glen Maidment 'Southern Cross'



Flaws in orchid flowers can occur because of environmental conditions and pest damage.

Environmental damage can occur with both overwatering (and rain) and underwatering as well as sudden changes in temperature and humidity. This will affect the quality of your orchid blooms.

While it is sometimes hard to counter the effects of too much rain, evidence of environmental damage is usually quite visible with signs like botrytis (spotting on cattleyas petals in particular), uneven colour, and problems with buds developing or falling off.



Pest damage is caused by snails, slugs, and insects. The damage caused is also easily visible with holes in the petals and sepals, edges of these being eaten away.

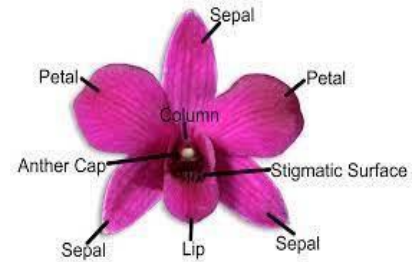


If your orchid flowers have any of these signs and symptoms, don't bench them until your problem is resolved.

2 Presenting your orchid in its best light for judging.

As well as the quality of the orchid, judges also assess the presentation of your orchid. As one judge has related, your orchid flowers should sit up and say, "Look at me!" The aim is to produce the orchid for display showing its most important features at a standing height without having to bend down to

see the sepals, petals, columns etc. The flower (the surface from the dorsal sepal to the lip) should be in a vertical plane when viewed from the front of the flower.



3 Staking orchids for presentation

Staking is one of the most important aspects of presentation, lifting the flower up to a position where it can be judged in its best position. Because the spikes and blooms can be quite heavy, staking your flowers is helpful in maintaining a vibrant orchid because it will help the flowers to grow into a beautiful presentation of which you can be proud.

In the case of the cattleya shown on the right, a straight stake is used on the flower on the left raising the profile of the flower. The second flower on the right is not staked and would be very difficult to assess effectively from a standing position.



Not all orchids flower in the same manner, but the principle of presenting the orchid in the best light will always apply and it is a matter of common sense.

The Brassia below, if allowed to go without staking, will probably hang to the floor with the weight of the flowers. However, its flowering habit means the flowers extend along the stem and therefore a straight stake would not be appropriate.

In this case, they have used a combination of a straight stake to raise its height and a curved wire bent to shape to achieve its best position.



Staking Rules, The judges are very specific about the rules of staking and tying orchids, particularly in regards to eye safety. Different genera have different rules for staking and tying. (If in doubt, check with an experienced grower or judge.)

Our Winter Show Schedule gives us the following guideline which is consistent with STOCQ societies:

“Staking and tying to display the inflorescence to its best advantage will be permitted, but if in the opinion of the judges this is considered to be excessive, the judges have the right to ask for the ties to be removed to what is considered by the judges to be an acceptable level.”

Hints for presenting your orchids well for benching.

1. Orchids produce only two or three spikes, grow them facing north, so the flowers face the same direction. For orchids with many flowering spikes, rotate the pots as they grow to encourage flowering all over the plant.
2. When the buds are just starting to crack open, move the plants into a sunny - but covered - spot to develop the inflorescences. This is to prevent 'spotting' from overhead watering or rain.
3. Feed with a potassium-rich fertiliser when the spikes are forming to improve flower colour and size.
4. Stake with thin stakes to the required height, or wire which can be bent to the required shape. Ideally, stake as soon as the orchid spikes begin to develop. Orchid clips or ties that have been trimmed to size are commonly used.

Problem solving Scenario

You have a great orchid that you intend to bench at the next COS meeting and you discover that one of the flowers, for any number of reasons, has fallen off. You still have the flower.

Q: What do you do?

A P l a c e the flower in pot for the judges to see.

Going to Orchid Shows

We have an open COS Winter Orchid Show in July each year. An open show means that entries for all sections in our schedule are open to other members of STOCQ societies and that our own orchids are assessed by a STOCQ judging panel along with theirs. That helps us in setting the standards of quality of our culture. There is both a Novice section (only for our members) and an Open section in our show.

Our winter show has a schedule and a set of rules that help to maintain the standard and the health of our plants. If you are interested in taking this next challenge, please let us know and ask for a show schedule which will outline our dates and times, our classes, and the associated rules for your entries.

Most of the major towns north of the Brisbane River have very active Orchid Societies that also conduct annual orchid shows. Sometimes, most of these shows are detailed in the monthly calendar as part of our COS newsletter. Normally the shows are divided into two sections: a display competition section and a sales section that sells not only orchids, but also orchid accessories such as pots etc., that you might need to maintain your collection.

These are well worth attending for three reasons:

- 1 As a member of COS, who are affiliated with the STOCQ, it is well worth attending or benching at other STOCQ shows as by doing this you reciprocate with other clubs who attend, bench and support our show.
- 2 You are able to see how other societies present their various orchids.
- 3 You are able to see many different genera on show first-hand, gain helpful cultural advice from exhibitors and purchase a new genus or just another plant to add to your collection.

COS conducts a number of activities each year in addition to our own Winter Show, including bus trips to other shows and nurseries, and our closed show displayed in the Morayfield Shopping Centers.

Occasionally shows are held as closed events, which means only the members of that society can submit entries. This has occurred recently because of our Covid restrictions.



Other activities include fundraising events such as sausage sizzles and promotional events. If you can assist at these events, you not only help our society, but add to your opportunity to gain further knowledge of the different orchid genera and history of the orchid world.



Information and Culture Hints for Growing your Orchids Successfully.

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It is the responsibility of the individual to validate such advice before applying it to your orchid collection.

With any chemical/ fertilizer use, please read the relevant material safety data and ensure you follow the safety guidelines and dosage.

Purchasing Gadgets

There is little doubt that, as a novice, attending activities and asking questions is the best way to learn. All the basic principles such as potting, potting mixes, PH requirements and all sorts of other things can be learned by asking questions and listening. A novice can sometimes also get assistance by purchasing some basic items such as a PH testing kit and a relative humidity weather station.

Managing Temperature and Humidity for your Orchids.

While we may remember the 40+ temperatures that sometimes occur during our summer season, it's a myth to say that orchids grow in tropical and sub-tropical climates and should be able to cope. We do need to have an understanding of relative humidity so that our orchids don't get signs of burning on the leaves.

A potted plant can only absorb so much water, so if the humidity is high and your orchids have just been watered, **don't** water the floor. More moisture will rise from the floor preventing your orchid mix from drying out and increasing your chance of root loss in your orchids. There are so many orchid species around that require different light, heat etc and growing them out of their natural environment will always be a challenge. Getting the temperature and humidity right in a mixed collection will also be a challenge.

Even if the temperature is more than 40 degrees, the relative humidity can be around 30%. This is far too low for an orchid to cope with the high temperatures.

A brief explanation:

- Our temperatures are measured in degrees Celsius.
- Humidity is the amount of water vapor in the atmosphere. This relates to the amount of water held in the air and in the medium in which the orchid is growing.
- Relative humidity then is a percentage representing the amount of water vapor held in the air compared to the amount the air could hold if it was totally saturated. (100%)
When relative humidity reaches 100%, the air cannot absorb any more water.

How does this affect our orchids? In most cases in the wild, orchids not only live in a high temperature range, but the relative humidity often reaches 80%-100%. The average relative humidity in our area is between 30%-40%, yet most authorities will tell you that our shade houses should be maintained with a day time relative humidity between 40%-70%.

How to achieve this?

- 1 Simply watering the floor or misting at the right time of day will not only reduce the temperature, but considerably increase the relative humidity in your shade houses.
- 2 Ask questions of our experienced growers who will share with you what has worked for them, including leaving trays of water in your shade house.
- 3 While experienced growers can share what has worked for them, they won't be able to tell you the temperature and humidity levels in your own shade houses and this is vital information for growing healthy orchids. The best thing to do is to buy a simple weather station with these 2 features.

Watering your Orchids.

One of the concerns of new growers is how often to water your orchids. There are any number of plausible answers to this question. After research, in addition to the normal "not in the middle of the day" that applies to all our garden plants, the wisest advice was not to water your orchids after midday in tropical and subtropical environments.

In our subtropical environment, once the sun goes down the relative humidity in a shade house increases to as much as 85% and does not drop to around 40%-50% until the morning sun dries out the air.

Many renowned orchid growers believe the following:

- Watering late in the afternoon means that your orchids, pots and shade house will not have time to dry out before nightfall.
- That this excess water, combined with a lower night temperature and the high relative humidity creates a situation where the chance of contracting a fungal disease increases by 50-70%

The following hints seem to bring success:

- Water every week-10 days during the cooler months.
- Water 2-3 times a week during the warmer months.
- The type of potting mix can affect your plant orchid requirements. E.g., bark dries out more quickly than sphagnum moss.
- The potting mix should always be damp, but not soggy.
- The potting mix should never be allowed to get extremely dry.
- Where practical, try to avoid watering the foliage.

Fertilizing your Orchids

Many of the wiser growers will advise you to use fertilizers on your orchids. The most important ingredients in these are 3 macronutrients- nitrogen (N), phosphorus (P) and potassium (K), normally expressed as NPK and all are readily available in most shops and garden centers.

Fertilizers with a higher nitrogen ratio than Potassium are designed to promote growth while fertilizers with a higher potassium ratio than Nitrogen are designed to enhance your blooms. If you look at the analysis on a commercial pack such as a bloom booster, it will provide you with satisfactory advice. The list normally contains the following:

- Macro nutrients (above)
- Secondary macronutrients
- Micronutrients
- Trace elements

In most cases, the percentages of micronutrients and trace elements are adequate, however secondary macronutrients other than calcium are not. Secondary macronutrients include:

- Calcium (Ca)
- Magnesium (Mg)
- Sulphur (S)

Nutritional deficiency causes a yellowing of leaves (chlorosis), scorched black leaf tips and margins and an eventual leaf drop and bud blast (necrosis). These symptoms can manifest in new growths (often due to Calcium deficiency) and in old growths (low in Magnesium, Nitrogen and Potassium)

A number of eminent botanists' state "If an orchid plant does not receive even one of its essential nutrients, one cannot expect it to grow and flower to its maximum potential."

If you are a beginner, you do not have to fertilize your orchids to obtain a very reasonable result. Orchids that are healthy, with a good root system and clean foliage, will certainly benefit from fertilizer.

The natural process of photosynthesis involving chlorophyll (the green colorings on the orchid leaves), captures the light on our sunny days and converts it into chemical energy ie sugars etc. which the plant then uses as food.

Some of our experienced growers just advise us to use a weak solution of general orchid fertilizer fortnightly all year round to cover your whole collection which will bloom at different times of the year before we start to cater for possible macronutrient deficiencies. Others supplement their general fertilizer with macronutrients.

Too much or too strong fertilizer can burn orchid leaves and roots. Fertilizer overuse will make your orchids dark green, "soft", leggy, and straggly and will open them to all sorts of problems.

1. Yellowing and wilting of lower plant leaves.
2. Browning of leaf margins and tips.
3. Black, brown, or rotting roots.
4. Slow to no growth.
5. Leaf drop.
6. Crust of fertilizer on soil surface or around the seepage holes.

If this happens, stop fertilizing, wait a couple of days and only water your orchids. Leave in the light to let the photosynthesis process recover. Pumping fertilizer into a poorly growing orchid will eventually kill it and your enthusiasm to continue.

If you miss a fertilizing session, don't double it up. Just wait till the next scheduled time to apply your fertilizer.

Hints:

- Understanding fertilizers can be a bit daunting, so the wise advice is first to learn to grow an orchid and be able to recognize what a good orchid looks like.
- Establish a year-round program to strengthen your plants.
- Flush out your orchid pots monthly to avoid excess salt building up in your potting mixes.
- Over fertilizing, like over-watering, is a major cause of orchids dying.

Managing Pests and Diseases in your Orchids:

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It is the responsibility of the individual to validate such advice before applying it to your orchid collection. With any chemical/ fertilizer use, please read the relevant material safety data and ensure you follow the safety guidelines and dosage.

Our goal as orchid growers is to grow healthy orchids that bloom. Management of pests and diseases to achieve this means that our cycle is to observe, diagnose and then treat promptly.

Prevention is better than cure; good cultural practices and purchasing healthy plants reduce the chance of disease. The most common way of acquiring pests is purchasing an infested plant.

Hints:

- Check any new plant carefully and quarantine it away from the growing area for a minimum of two weeks to help curtail the introduction of new pests and diseases.
- Meeting the plants' cultural needs is the best line of defense. Healthy plants are more resistant to pests and disease than their weaker cousins. Attend to the basic cultural needs of your orchids — water, temperature, light, fertilizer, and humidity; keep the bark media fresh or use an inorganic potting mix and get to know the specific cultural requirements of the orchids in your collection.

- Set up a preventative spray program for yourself using different insecticides to confuse the pests. Don't forget to start your spraying outside and around the base of your orchid house, because they come in from the outside first.

The following sub- sections outline some of the pests and diseases and hints to help you manage and prevent them.

Botrytis

Botrytis strikes during cool damp weather in areas where circulation is poor. On orchids, the disease is caused by a fungus, *Botrytis cinerea*, resulting in unsightly brown spots on blooms. The fungus most often affects Phalaenopsis and cattleyas but may be found on a wide range of orchid genera. Older flowers are highly susceptible to infection.



Lifecycle

The fungus winters primarily on dead and dying material, and begins producing and dispersing spores during cool, damp weather in the spring and autumn.

Damp conditions, rapidly rising humidity or disturbing infected plants may release spores in the surrounding growing area. These spores can be distributed by wind, rain, or any mechanical action such as moving the infected plants. Given favorable conditions, the fungus can proliferate very quickly, infecting healthy plants within 14 hours.

Environmental Conditions:

- Temperature of 18-23 C
- Ambient humidity of at least 92%.

Symptoms:

Botrytis manifests itself as small, brown, necrotic spots on orchid flowers. These spots may increase as the infection progresses.

Prevention:

The best form of control is prevention, which involves sanitation, air circulation and careful watering.

- Sanitation. Inspect the growing area for conditions favorable to growing botrytis. Remove any plant debris, spent or fallen flowers and leaves from the growing area.
- Air circulation. Keep plenty of fresh air always moving through the growing area and around the plants. A stagnant damp environment with inadequate air movement promotes its growth. Increasing the ambient temperature and air movement and decreasing humidity during cool damp weather will help in decreasing or eliminating any excess moisture on plant tissue.

Treatment: There are many fungicides available.

Hint: the spraying of algae and bacteria control for swimming pools on the floor of your orchid house will not only control moss build up on your floor and pathways but could also help with your problem.

Aphids and Mealy Bugs

Aphids and mealy bugs, usually carried by ants, are normally found in the same location on orchids, such as the growing tips, buds, and flower stems. Aphids come in many colours including green, brown, grey, black, or white.

Aphids are very effective carriers of disease, especially viruses and they are particularly damaging to flower buds by causing them to be deformed when the flower opens.

Treatment: You can remove aphids with warm water, but you must ensure you remove them completely or they will simply move to a new site. The best method is to use any of the available products based on white oil, however you must be careful that you do not damage the bud.



Mealy Bugs are easily identified as mealy or cotton masses on your orchids. If not controlled, mealy bugs will not only infect foliage, but will ultimately infect root systems and surrounding potting mix.

Treatment:

Mealy bugs can be removed using surface insecticide sprays, however for heavy infestations, a systemic insecticide may be required. Many products available are eco-friendly while others are not, so be careful to follow safety precautions.

If mealy bugs have reached the root system, there is no alternative but to remove the orchid from the pot, soak the roots in an insecticide solution and re-pot into a new pot with new potting material.



Dendrobium Beetles

The Dendrobium Beetle is native to Australia and are found throughout Queensland and Northern NSW. They are bright orange with 4 black spots on the wings and black antennae. They feed mostly on dendrobium species and hybrids but will also feed on other orchid genera.

They are probably the orchid's most destructive pest and are especially efficient at destroying all forming flower buds and foliage if not controlled.



The adult will lay its eggs on new growths, flowers, and buds. The eggs are very tiny, elongated, and green, creamish colour. The lifecycle of the beetle is only a couple of months and is most active during the warmer months, but you will still find an occasional beetle in winter. Dendrobium beetles hunt in pairs, so if you find one, look for the other.

Although easy to control with most insect sprays such as Carbaryl, the larvae are difficult to control as they are usually inside the canes and thus not reachable with non-systemic sprays.



Treatments:

- Use a systemic insecticide. When applied to pesticides, the term systemic means that the chemical is soluble enough in water that it can be absorbed by a plant and moved around in its tissues. Movement of systemic insecticides, like all transportable chemicals in the plant, takes place principally in the plant's vascular system, which includes the phloem and xylem.

- Catch them at their own game. Hold a bucket under their location, tap the leaf and when they fall into the bucket, kill them. Remember however, that juveniles fly so you need to be quick.

- As above, but half- fill the bucket with water and drown them.

- As above but add a little cooking oil to the water which will result in a quicker death for the beetles. It is worth keeping a jar of water and oil with a lid in your orchid house so that you can eradicate them as you find them. It will save a lot of chewed flowers and leaves.



Damage caused by the beetle

Slugs and Snails

Slugs and snails can be extremely damaging to orchid roots, stems and developing stems and flowers. They normally come out at night. They love cool, damp spots and if they travel, they will leave a tell-tale slime trail.

The bigger of the two can do some damage. Beware if you intend to introduce a few brooms under your benches. Make sure they are slug free. Putting pellets among the leaves will help. Once again poor shade cloth will let them run wild.

The very small "garlic" snails love to feed on new root tips. You may not see them but if your root tips are stubby and black, "garlic" snails are present. They love to roam after rain, so scatter a few snail pellets across the tops of your pot to manage them. Do not cover the top with pellets as this will clog up your potting mixture.



Treatments:

There are several methods use to remove slugs and snails:

- Old beer in a saucer is very attractive to them and should be left out overnight.
- Lettuce leaves left in a bowl will also attract them.
- There are several quality slug pellets available at nurseries and hardware stores.



Cockroaches

Cockroaches are also night feeders and can cause considerable damage to flowers and flower buds. They are also partial to new roots, again causing extensive damage.

Treatments: Cockroaches can be removed by preparing a bucket of water mixed with an insecticidal solution. Dunk your orchids in the solutions till air bubbles disappear. If any roaches are present, they will rise to the top.

- Alternatively, you can use pet friendly commercial roach stations available for hardware stores and supermarkets.
- Another method is to use a glass jar with a smear of butter or Vaseline approx. 20mm inside the neck of the jar and bait it with a piece of banana. Once the cockroach gets greasy feet, he can't get out. Some type of cover is required when using outdoors to prevent water entering the jar.

Thrips and Mites

Thrips are small, slender flying insects about 1mm in length and can be very destructive especially to flower buds, maturing flowers. and young leaves. The female has darker colouring.



They are also effective carriers of fungal disease and viruses. Thrip damage is easily identified with distortion to the bud and flower with brown damage or uneven colorations.



Treatment:

Managing is with the use of contact or systemic insecticides.



Mites

Mites are not insects but are part of the spider family and like the thrip are effective carriers of diseases and viruses. They thrive in hot arid conditions and can hatch in just a couple of days. It can take just 5 days for a generation to be complete. Humidity (misting) slows them down, making it harder for them to thrive.



Being less than 1mm long, they are hard to see. They can be red, yellow, green, or brown in colour and can evidently change colour at different times of the year.

They pierce the outer surface of the leaf and feed on the chloroplast and chlorophyll within the plant, therefore weakening the plant and decreasing their resilience to other pests and diseases. New damage results in the leaves having a silvery, stippled appearance. Where the damage is old, the colour is brown.

Treatment:

The most effective treatment is to dislodge them with water, making sure you separate the pot while the treatment is happening and doing both the stems and the underside of the leaves as well as the top.

You can also use a miticide for ornamental plants but research their toxicity. Normal insecticides will not be effective as they are designed for insects. You will need to use consecutive treatments to also kill the eggs. Some growers also spray Neem Oil as a preventative as the spider mites cannot penetrate the leaf surface through the oil.

Scale

Scale is one of orchids most serious insect pests and can quickly devastate a whole collection, if not found and treated promptly.

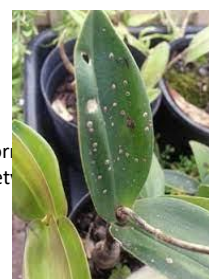
Scales come in various forms (about 27 forms), both hard- and soft-shell types, but most have a protective shell that acts as armour for protection. The males will appear as a white and powdery, while the females appear as large brown shells which protect their eggs. Cattleyas are particularly susceptible to a soft brown Boisdale scale.

They are frequently found on the underside of leaves and flower sheaths and stems where they suck sap.

Infestations may be carried into the orchid area by ants which are attracted to the honeydew they secrete or by air currents.

Treatment:

- Isolate the plant while you treat it and for a while afterwards to ensure the lifecycle has been broken.



- Keep it away from air currents that will help the crawler stage move from one plant to another.
- For small infestations, some growers report that washing each infected plant with mild, soapy water will help to remove them. Others have reported that swabbing the infected area with rubbing alcohol on a cotton bud will remove the scale. Be careful to wipe away any excess alcohol to avoid damaging your leaves.

Their natural predators are ladybugs and wasps who lay their eggs inside the hard scale shell and feed on the scale eggs, before emerging as adult wasps.

White oil can be sprayed onto both sides of the leaves, making sure the whole leaf and stem area are covered. This will stop them from sucking through the oil. Take care to keep the plant shaded to stop the leaves from burning with the added oil.

Scale insects are not susceptible to contact insecticides because of the waxy scales, however white oil with some added Malathion has proved effective if the leaves are thoroughly coated.

Hints:

- Ensure your orchids are well spaced to slow down their spread from plant to plant.
- Check your collection carefully and regularly and remove any infected plants away from your others.
- Quarantine any new plants for 2 weeks before you add them to your orchid house.
- You may need to repeat your treatment every 10 days till all your orchids are clear of scale.
- If the scale is still there, you may also need to check your potting medium. Remove the plant, wash and disinfect, then re-pot in a new pot with new medium.

Prevention is better than cure -observe, diagnose and treat promptly.

Black Rot and Crown Rot

Black rot, Crown rot and damping off are fungal diseases that attack the leaves, roots or crown of the plant. Fungi and bacteria commonly affect orchid plants, most usually by causing some form of rot or discoloration.



A fungal infection is a mold-like organism which infects a plant and becomes visible when it produces its spores. The rot will normally start as small brown spots with yellow markings on the leaves. This may be mistaken for sunburn, but if in the crown, the whole leaf appears brownish, and the rot will soon extend downwards into the crown.



Everyone at some stage will experience this problem. Top growers, unless the plant is of some value, will put the plant in a plastic bag and dump it, eliminating the problem from the greenhouse. They will then spray the area with a systemic fungicide.

To help keep fungal problems at bay, you must practice good housekeeping. Have a container in your shade house to deposit dead leaves etc, Keep the floor clean and tidy and raked over.

The most important advice is to only use sterilized cutting tools. One tool per cut per plant.



Treatments:

Treatment for all types of rot is similar. The diseased parts must be cut back to clean tissue and the plants treated with a fungicidal solution.

In some cases, it is best to leave the orchid unpotted for a few days in a warm shaded place.

With root rot, it is best to dump the plant, pot, and all.

Crown rot is caused when water is allowed to sit in the crown or bud of the plant and the sun heats the water. Where practical, the plant should be opened where the water sits, an experienced grower will demonstrate this for you.

Disease Prevention:

There are two main areas where disease can rapidly spread through your orchids:

- 1 Via pests such as aphids, thrips, and cockroaches, making it important that you have an effective eradication program.
- 2 Via your cutting tools when you are re-potting.

Some simple rules to help disease prevention:

- Water your orchids early during the day to allow the moisture to evaporate from the leaves before nightfall.
- Make sure your orchids have adequate airflow.
- Remove leaves cutting etc. with a sharp, sterile knife or scissors.
- Sterilize your cutting tools each time before you use them.
- Treat any problem immediately.

Viruses

There are about 30 viruses that infect orchids. Many of them are related to the tobacco virus. There is no cure for any of them. The virus spreads right through the plant through the internal vascular system called the xylem and is carried to other plants via our normal insect carriers and processes. It can be asymptomatic for a while, hence the need always to quarantine any new plants for 2 weeks and to regularly observe and treat immediately any insect or bacterial infestations.

The infected plants cannot be cured and need to be bagged and tossed immediately. While this is hard, it is better than losing your whole collection.



Glossary of Terms

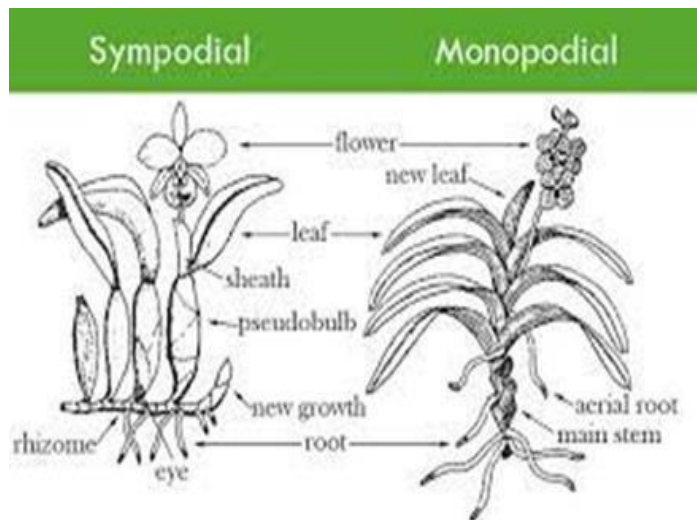
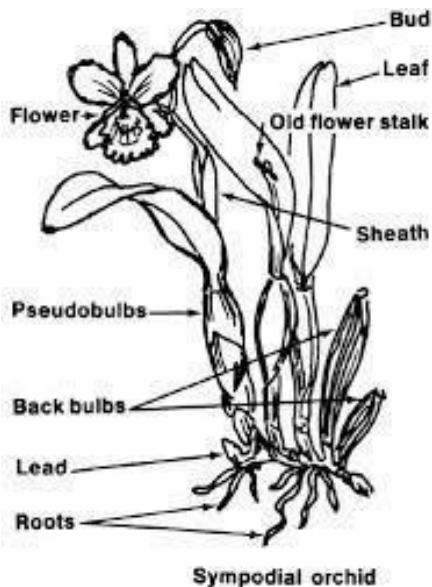
The following glossary covers most of the common terms used in orchid culture:

Aerial	Living without contact with compost or the ground.
Anther Cap	The cap covering the pollen masses.
Alliance	A group of closely related genera which can interbreed.
Back bulb	Old, but living pseudobulb, usually without leaves.
Back Cut	The back bulbs cut from the original plant.
Bifoliate	An orchid with 2 leaves on each pseudobulb.
Bract	a modified leaf at the base of the flower.
Cane	An elongated pseudobulb.
Clone	A plant which is genetically identical to others which have been made from the parent plant by division or by tissue culture.
Column	The central body of the orchid flower formed by the union of the stamens and pistil.
Cultivar	In orchid culture, a cultivar is an individual, named plant chosen for its qualities. Its cultivar name is indicated by single quotes. E.g. <i>R/c.</i> Goldenzelle 'Lemon Chiffon'. 'Lemon Chiffon' is one of several cultivars of the grex <i>R/c.</i> Goldenzelle. Such a cultivar can only be reproduced by division or by tissue culture. While cultivars in some other areas of horticulture may be grown by inbred seeds, orchid cultivar reproduction is limited to the methods above.
Deciduous	Losing leaves at the end of growing seasons.
Division	The means by which a single cultivar is divided into 2 or more plants. It is made by cutting the forward bulbs from the original plant.
Dormancy	The period when the plant is not actively growing.
Epiphyte	A plant that grows on another plant, but is not a parasite, as it obtains its nourishment from the air or rotting vegetation.
Eye	The bud of the growth.
Family	A group of related genera.
Fimbriate	Fringed.
Genus	A subdivision of a family, consisting of one or more species which show similar characteristics and appear to have common ancestry. Its plural is 'Genera.'
Grex	The result of a cross between 2 species or hybrids.
Habitat	The locality in which the plant normally grows.
Hybrid	The offspring resulting from the cross between 2 different species or hybrids. - see also Grex
Inflorescence	The flowering part of the plant
Keiki	A plantlet produced as an aerial offshoot from the plant.
Labellum	The lip or modified petal of an orchid flower.
Lead	A new vegetative growth.



Lithophyte	A plant that grows on rocks
Medium	The material in which orchids are grown.
Mericlone	An orchid produced by meristem (tissue culture) Meristem A laboratory technique used to produce clones of an orchid.
Monopodial	Growing from the apex of the plant (single footed)- eg vandas
Monotypic	A genus with a single species
Natural hybrid	A hybrid produced by chance in the wild.
Node	The thickening knot or joint on a stem which usually bears a leaf or a bract.
Parasite	A plant that lives on and derives nourishment from another plant.
Pendulous	Hanging or pendant
Petal	in orchids there are 3 petals, which are segments of the second whorl of the flower. The third of the petals is called the labellum and is usually greatly enlarged.
Pistil	The female or seed producing organ of a flower, consisting of the ovary, style and stigma.
Pollen	The fertilizing agent produced by the anthers.
Pollination	The transfer of pollen from the anther to the stigma.
Pollinia	The masses of pollen grains found in the anther.
Pseudo Bulb	The thickened portion of the stem of the orchid. It's not a true bulb.
Raceme	An inflorescence which bears single stalked flowers, usually opening from the base.
Reflexed	Sharply bent upwards or backwards.
Rhizome	The root bearing horizontal stem, from the apex of which come the pseudo bulbs or leaves.
Rosette	A cluster of leaves in a circle formed around a short stem.
Sac	A pouch or cavity
Sepal	One of 3 outer segments of an orchid flower.
Sequential	The opening of flowers over a period rather than all flowering at once.
Species	A naturally occurring group of plants sharing one or more common characteristics which make it distinct from other such groups. One or more species are contained within a genus.
Spike	A flower stem.

Spur	A tube like projection at the back of the lip of some orchids.
Stamen	The male organ of an orchid. It is always fused to the style to form the column.
Stigma	The part of female organ of a flower which receives the pollen.
Sympodial	A type of growth in which each new root, arising from the rhizome of the previous growth, is a complete plant in itself.
Terete	A pencil shaped leaf.
Terrestrial	Growing in the ground.
Tessellation	A checked pattern on leaves.
Throat	The cavity within a tube-like lip.
Tribe	A group of related genera.
Tuber	The thickened normally underground stem.
Unifoliate	An orchid with one leaf on each pseudo bulb.
Variety	A subdivision of a species, a group of plants that differ slightly from the main species type.
Vegetative Propagation	The increasing of a plant by raising from division or mariculture.
Velamen	An absorbent white layer on the outside of the roots.
Virus	An infectious agent which increases in the living cells causing disease.
Whorl	An arrangement of the leaves or the organs in a circle around the access.



Acknowledgement: Thanks to all those who, over time, have helped to produce and refine this booklet for our members. Some of the images and information have been sourced from a variety of "free to download" internet sources in addition to that already in our previous editions. Thanks Linda and Robyn for the use of your 2021 photos as well.
 Fran McCoy (Feb 2022)