# Australian Native Orchid Society - Macarthur Group

MARCH 2016

Edited by Tony Asquith mail: aaasquith@bigpond.com. Phone 4625 9874

**President:** Mr. W. Southwell (Ph. 46818589) **Postal Address**:- 8A Boundary Road,

**Secretary:** Mr. J. English (Ph.86262934) **PARRAMATTA. 2150**

**Treasurer:** Mrs. C. Asquith (Ph. 46259874) **Next Meeting: THURSDAY , 17th MARCH, 2016**

**Life Member:** Mr. J. Riley, M. T. Cooke.

**Conservation Officer:** R. Hanman



**Venue: BIRRAWA HALL**
**FITZPATRICK ROAD**
**Mt. ANNAN.** **Doors open 7.15pm, benching closes 7.45pm, meeting starts 8pm**

Hi to All
Congratulations to Ross for plant of the night and Noel for popular choice.

George from the Orchid Tray Company will be at the March meeting, followed by a presentation by Graham Bradburn.

At the April meeting there will be a speaker followed by our annual Auction, all proceeds to the club and a good opportunity to donate excess plants or equipment for sale, **BUT not until APRIL**.

Schedules for the Rosemeadow Show on the 7th May will be available and plants will be needed for the sales table, good chance to sell any exotic orchids in flower.

At the last meeting of Campbelltown Orchid Society, Tony and Carol Asquith had Life Membership bestowed on them. They are very good workers for the club over many years and this honour is well deserved. Well Done and Congratulations.

Wally

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**MINUTES OF Meeting 18th February, 2016**
**Meeting Opened:** About 7.30pm**,** and President Wal welcomed the attending members.

1. **Apologies**: Ian Lawson
2. **Minutes from Previous Meeting: nil**
   **Proposed by**: Don Roberts **seconded by**: Ross Morrison
3. **Business Arising from the Minutes:**
4. **Treasurer's Report:** Moved Carol Asquith Second: Terry Cooke
5. **Inward & Outwards Correspondence**: Newsletters sent and received

**Delegates Report nil to report**

General Business:
Orchid Tray Company will attend at our next meeting and Graeme Bradburn will be guest speaker.
Raffle held : Julia Bismire, Peter Brown (2), Greg Steenbeeke
Request to publish Annual Point Score details.

Next Meeting General Meeting 17 March 2016

And the meeting closed.. about 9.30pm

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## Water first or fertiliser first?

(Part 2) (Article "Back to Basics Noel J. Grundon Atherton QLD)

Now we come to the question of, "Do we water first then add the fertiliser solution; or do we add the fertiliser solution first?" Put another way, "Should we add fertiliser to the dry compost, or water the compost first?'

Much good advice says "never fertilise a dry compost; water it first, and add the fertiliser solution second." I don't think this makes sense! Consider an orchid root. Most orchids have roots that are adapted to a dry environment. Only the central cylinder is alive; the outer layers are made up of dead cells. These dead cells act like a sponge; they absorb water and any dissolved nutrients as soon as the water solution passes over them. And like any sponge, when they are full of water, no more water can be absorbed. So when you water first, you fill up the sponge with water. Then when you add the fertiliser solution, none of the fertiliser nutrients can get into the sponge until the plant has absorbed water from the sponge layer. To me, it makes more sense to fill up the spongy outer layer with fertiliser solution first.

## When Should I Water?

It is important that plants transpire or loose water for the reasons outlined in the previous section, but it is equally important that the plants do not transpire too much water or they will become dehydrated and growth will slow down. Hence, we need to supply water to orchids for reasons of water needed for transpiration and nutrient supply. So, why, when, and how do we water the orchid? And did we need to water it today? These sound like stupid questions - but pause and think for a moment! The answer could determine if you needed to apply water to the compost or to the floor of the orchid house instead!!

For example, did you water the orchid because the compost was dry and you did not want the orchid to dehydrate? Correct - go ahead and water the compost, even if the orchid is in its resting season. If the orchid needs to absorb water to prevent dehydration, it will need to have water applied to its roots. Even orchid roots, which do not have growing root tips, can still absorb water. Most of the water need by an orchid plant must be absorbed through the roots; very little water can be absorbed through the leaves and stems that have special waxy coatings that prevent loss and absorption of water.

Did you water the orchid and compost because the temperature was too high and you wanted to cool the house down? Wrong - water the house, walls, and floor, not the orchid! Mist or very lightly water the orchid plant to cool it if necessary, but do not water the compost. There is no need to water the compost if it is already moist enough to provide the orchid plant with all its water needs. To water the compost at this time might cause poorer growth from over-watering. Did you water the orchid plant and compost to increase the humidity of the atmosphere and so prevent excessive transpiration or water loss? Correct - but only if the compost is dry and the orchid plant needs water to prevent dehydration. However, it would be wrong to water the compost when the compost is already moist enough and the orchid needs no water; in this case apply water the floor and walls of the house instead.

When you decide to increase the humidity of the orchid house to reduce the rate of transpiration or water loss from the orchid plant, keep in mind that increasing the humidity of the atmosphere will benefit the orchid only if the humidity is high when the orchid opens its stomata or pores; while the stomata are closed, the orchid plant loses very little water by transpiration. But when do orchids open their stomata? The thin-leafed genera such as varicosum Oncidium, Lycaste, Odontoglos-sum, and Paphiopedilum apparently open their stomata during daylight hours. Hence, for these genera, it is important not to let the humidity of the air get too low at all times. However, some the genera open their stomata only during the evening or night. These genera can undertake what is called the 'CAM-photosynthetic pathway' and characteristically have very thick leaves. Hence, the humidity must be high during the evening and at night for genera such as Cattleya, Vanda, Dendrobium, and certain species of the Cymbidium genus. Because these genera do not open their stomata during the day, it really does not matter to them what the daytime humidity is like.

## Frequency of watering

How often you water will be determined by many factors including the size of the pot, the size of the plant, the closeness or fineness of the compost, and the prevailing weather conditions. Most epiphytic orchids are plants that have many adaptations for surviving in very droughty environments. They have a number of adaptations that assist their survival, such as thickened leaves, thick waxy cuticles on the surface of their leaves, and stems that store water. However, the more terrestrial genera have thin leaves, thinner cuticles, and often have no water storage organs, and are not as well adapted to withstanding extended dry periods during their period of active growth.

With epiphytic genera such as Dendrobium, Oncidium and members of the Vanda and Cattleya alliances, the compost can be allowed to become dry before they need to be watered, but the more terrestrial genera such as Paphiopedilum need watering just before the compost becomes dry. If the compost is close or fine (i.e. with ample peat moss), you will have to water less frequently than if you have a coarser compost (i.e. with iarge bark, charcoal

or gravel). If the plants are large for the pot size, they will use up the water more quickly than will small plants in the same sized pots, and may need more frequent watering. If the temperature is hot, or if there are drying winds, watering will need to be done more frequently. We often read in books that such and such genera need a resting period if they are to flower at their best. During this resting phase, total withholding of water is often recommended. However, at other times, a light misting is sometimes recommended. Plants that require this resting phase often grow in monsoonal climates that are characterised by warm wet summers and cooler dry winters. Even when very little rain falls for a 6-month period, scattered showers still occur, and the relative humidity is high, especially during the early morning. Thus, even these resting plants may benefit from a light misting of their leaves and the floor to maintain a high humidity and to prevent too much desiccation of the plant during the resting phase.

## How much water to apply?

Each watering should provide sufficient water to wet all the compost in the pot. That is, watering should continue until water runs freely from the drainage holes of the pot. If you are watering by hand, it is easy to provide just the correct amount of water to each individual pot, but remember that the compost will absorb some of the water and it is a good idea to go back and rewater the pots after about 15-30 minutes to make sure all the compost is wet. If you have a timing device to water your plants, ensure that the water is not turned off until water is dripping freely from the drainage holes of the pots.

By supplying excess water at each watering, you make sure that the compost is completely wet-up and contains sufficient water to last the plant until the next watering. By providing enough water to cause it to drip freely from the drainage holes of the pot, you ensure that unused fertiliser does not build up in the compost and cause damage to roots or leaves (to be continued next month.)

**This article has been published in two parts (First part in January and another to come) in the January and February bulletin of Wanneroo/Joondalup Orchid Society of Western Australia. Take a moment to read it as it is an excellent article.**

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**NUTRITIONAL SUPPORT FOR TERRESTRIAL ORCHIDS Written by Richard Austin ©**

Plant nutrition is an important aspect of cultivation, and understanding where the nutrients come from, and how they are taken in, is the first step towards ensuring healthy growth. Now, while a good deal of emphasis is placed on the value of fertilising, 96% of the essential elements found in plant material comprise carbon (45%), oxygen (45%) and hydrogen (6%). These are the major elements which come from the atmosphere and water ... so, providing your plants receive water, they have most of what they need! The remaining four percent consists of the macro (NPK), micro and trace elements, which are found in water, soil and decaying organic matter... and of course various forms of fertiliser.

To be absorbed, the macro, micro and trace elements need to be in solution. Most are then taken in by the roots as ions (electrically charged particles), thanks to the process of respiration which oxidises the sugars from photosynthesis, thus releasing the energy for this to happen. Now for photosynthesis to occur, the orchid needs foliage, so pre-emergence growth (which may take a month or more) is drawing on the starch reserves in the tuber, and may also be aided by mycorrhizal support. Once the orchid has foliage, and for growth to continue, the amount of plant sugars produced by photosynthesis, must be greater than that used by respiration over a 24 hour period. Simple! However, there is catch. All this is temperature related, deceasing markedly below 15°C. In Melbourne, this narrows the window for additional fertilising for the majority of species, to the post emergence period, up until the weather cools in late autumn. As for the spring period of warmer weather, the orchids that emerged in autumn and winter are no longer in a growth phase. Tuber replacement occurred earlier in the growth cycle, while flowering is simply tbc final act before the current season's plant dies. This largely draws on the remaining food reserves of the old tuber and those in the foliage, so fertilising at this time is of little value, as little will be absorbed.

Terrestrial orchids also receive nutritional support from mycorrhizal fungi, which 'ebbs and flows[1] at various stages and varies in dependency from species to species. For this support, the fungi require access to a carbon food source such as decaying leaf mould and wood chips or shavings. Once incorporated in the potting mix. the organic material continues to be broken-down by bacteria and fungi, while the orchid gains nutritional benefits through the digestion of fungal hyphae coils within the plant called 'pelotons'. If the mycorrhizal association is lost, the orchid will ultimately decline.

For all this to work, die organics (wood chips or shavings and leaf mould) must be well composted to prevent nitrogen drawdown. This occurs when microbial activity takes nitrogen from other sources (the orchid) to breakdown poorly composted material, resulting in yellowing plants. Here, the addition of a little blood and bone (dessertspoon per 9 litres of mix) when making the potting mix helps buffer any marginal material. And don't forget, it's the fine friable material of your composted organics that represents humus, which holds a bounty of nutrients! So, it's important to include all the various grades of organic material in the mix, for the fungi and the orchid. If natural soil is a component of your mix (this isn't essential), the nutrients it contains become available from the fine silt it produces, and the organic material. The potting mix also influences the uptake of various elements due to its pH, and providing the recommended guidelines are followed (typically pH 5.5 to 6.5), there should be little problem. However, if deficiency symptoms suddenly appear within a pot, check the potting mix pH before you take any other action and re-pot if necessary.

Potting mix microbial activity can also be stimulated by the use of seaweed solutions. These products are not fertilisers in the strict sense, rather tonics. They also aid in strengthening certain aspects of plant structure, and offer stress relief for plants repotted during growth. The two most popular brands are low in phosphorous, and can be used year round. When we put all this together, keeping the potting mix biologically active becomes a key to providing nutrition to the orchid, so have no doubt that it's a healthy potting mix leads to healthy plants!

As for fertilisers, they are available in two distinct forms, organic and artificial. Organic compounds such as blood and bone, humus and aged manures (from naturally grazed animals) tend to have low element concentrations, but this makes them relatively safe to use without fear of overfeeding. You see, plants can't readily control how much they absorb, or decide if an element is good or bad for them. If it's there, they'll take it, which can have dire consequences, given that mycorrhizal fungi and terrestrial orchids are rather sensitive to phosphorous and salt levels. Even with the organic forms mentioned, some will need diluting at 10:1 or more if you steep solids to make a'tea', while some bags of blood and bone can be rather high in phosphorous (it should be around 1.5% or less), so check the labels before you buy! If you have a worm farm, don't use the liquid from it on your terrestrial orchids, as this also has high phosphorous levels. Artificial fertilisers (with the exception of those formulated specifically for native plants) tend towards higher phosphorous and salt levels. Those formulated for orchids, are targeting epiphytic plants, not Orchidoid terrestrials, so they too are generally unsuitable (again, check the phosphorous level).

Now, given that the macro, micro and trace elements need to be dissolved in a solution to be of use by the plant, liquid applications are the most efficient way of applying fertiliser. As for slow release pellets, they require relatively high moisture levels to breakdown effectively, which doesn't suit the generally meagre watering regime of terrestrial orchids. Neither does the slow release action, given the relatively short active growth period before the weather cools. This is
mentioned primarily for those using native potting mix as a base for their mix. This contains slow release pellets of native fertiliser, and while they won't hurt, they are unlikely to do much cither!

If you wish to try a supplementary fertilising programme, focus on terrestrial species with good rates of tuber multiplication. Be very cautious with solitary species, which typically have a strong fungal dependency and those that prove fickle at the best of times. Use a liquid fertiliser (ideally organic) with a half strength fortnightly spray application (water pots first), from emergence until the weather cools, at which time stop. You could also alternate with applications of seaweed solution, or just try this alone, even over the cooler periods. Evergreen species of *Cryptostylis* could be given a supplementary feed whenever new foliage appears, while *Spiranthes australis* can be fed from spring until flowering and, again, when the new foliage appears in late summer to autumn. And for those wondering why spray applications are recommended after watering; any plant should be well hydrated before you fertilise. It's also an easy way to apply a controlled amount, with less waste running out the drainage holes! As for foliar feeding... most finishes up round the root zone where it is taken in far more efficiently by the roots, rather than the foliage. Ultimately, it will be up to you to judge the benefits.

Editor: Following the four presentations, a few other experienced terrestrial growers joined Peter, Helen and the two Richards for a terrestrial panel question and answer discussion. The results will be published in next month's *Bulletin.*

Reprinted from ANOS Victoria Group October, 2015 with kind permission of the Author, Richard Austin. (see earlier articles last month on Terrestrials)

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**Benching Results FEBRUARY Meeting 2016.**

| | | | |
|---|---|---|---|
| Dendrobium Species | Den. cucumerinum | | W. & M. Southwell |
| | Den. Lichenostrum | | R. Morrison |
| Dendrobium Hybrid | nil | | |
| Sarcanthinae Species | Sarc. Hirticalcar | | N. Bates |
| Sarcanthinae Hybrid | Sarc Bessie | | N. Bates |
| | Sarc. Elise x Velvet | | D. Roberts |
| Bulbophyllum | Bulb.schillerianum | | T. Cooke |
| | Bulb. Schillerianum | | R. Morrison |
| Aust. Species Other | Cestichis reflexa | | R. Morrison |
| | Cestichis reflerxa | | R. Morrison |
| Aust. Hybrid Other | nil | | |
| Terrestrial Pterostylis | Pt. longicurva | | W. & M. Southwell |
| | Pt. caligna | | J. English |
| Terrestrial Evergreen | Spiranthes australis | | R. Morrison |
| Dockrillia | nil | | |
| Terrestrial Hybrid | nil | | |
| Terrestrial Other | Chiloglottis diphylla | | T. Cooke |
| Caladenia Species | nil | | |
| Australasian Species | nil | | |
| Australasian Hybrid | nil | | |
| Seedling | | | |
| Seedling First Flowering | | | |
| Growing Competition 1. | A. & C. Asquith | R. Morrison | N. Bates |
| Growing Competition 2. | nil | | |

**Plant of the night was Spiranthes australis by Ross Morrison and the Popular Choice was grown by Noel Bates Plant??**

**Congratulations**

D U N O has been relaunched and is now operating from Newcastle as Down Under Native Orchids & Ellemore Orchids by Callyn Farrell and Grahame Young … Website which is new is www.dunoau.wix.com/duno

The new catalogue 2016 Summer Seedling Catalogue is available and a new Spring Seedling Catalogue will be released in September 2016.

ALSO keep in mind Castle Hill International Orchid Fair , Castle Hill Showground

APRIL 15th & 16th! Lots of Vendors

GOOD GROWING

ANNUAL POINT SCORE

At the January meeting, the confusion over the annual point score calculation and principle which was agreed to earlier in 2015, was clarified but unfortunately was not recorded in the January minutes.

Briefly:-

1 Point is allocated for each plant benched
3 points are allocated first place
2 points are allocated for second place
5 points are allocated for popular choice
5 points to be allocated for judge's choice

Committee to determine the funding to be allocated to the Annual Point Score which is to be divided by the total number of points earned by members to calculate the point rate. Each member's number of points earned during the year is multiplied by the point rate to determine the member's prize.

The overall points score winner will still be able to be awarded the annual point score trophy.

The motion was moved by lan Lawson but the seconder is not known.