



Journal  
of the  
Native Orchid Society  
of  
South Australia Inc



**NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA**  
**PO BOX 565 UNLEY SA 5061**

[www.nossa.org.au](http://www.nossa.org.au).

*The Native Orchid Society of South Australia promotes the conservation of orchids through the preservation of natural habitat and through cultivation. Except with the documented official representation of the management committee, no person may represent the Society on any matter. All native orchids are protected in the wild; their collection without written Government permit is illegal.*

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Front cover from an original drawing of *Caleana major* by Helen Lawrence. Used with her kind permission.



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**JUNE 2012      VOL. 36 NO 5**

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**The Native Orchid Society of South Australia meets every  
4<sup>th</sup> Tuesday of the months February –November**

**NEXT MEETING 26 JUNE 2012**

**NEXT MEETING**

**Tuesday, 26 June St Matthew's Hall, Bridge Street, Kensington. Meeting starts at  
8:00 p.m. Doors to the hall will be open from 7:15 p.m. to allow Members access to  
the Library and trading table.**

**Graham Zerbe** is the speaker for the June meeting.

**DIARY DATES**

<b>Sat 23 June</b>	Brentwood ; 9:30a.m. onwards
<b>Sun, June 24</b>	Placid Estate & Monarto. Mallee greenhoods
<b>Wed, July 11</b>	Moritalta CP. Adelaide Hills greenhoods
<b>Sat, July 28</b>	Sandy Creek & Altona. Corysanthes
<b>25th November</b>	Annual NOSSA BBQ, Myponga

**NEXT COMMITTEE MEETING**

**Tues, 3<sup>rd</sup> July. Meeting commences at 7:30 p.m.**

## Judging results for May not available

### May Speaker

**Tim Jury** spoke on the work of the Threatened Plant Action Group in protecting native orchids and other threatened plants.

## FOR YOUR INFORMATION - NOSSA NEWS

### FIELD TRIPS

#### Reminder

#### Working bee at Brentwood Cemetery

**Sat 23 June** Brentwood ; 9:30a.m. onwards. It is recognised that this is very early for anyone attending from Adelaide & further afield. Come when you can, leave when you have to. We have been offered lunch provided if we notify the locals of numbers of people attending. Please let me know by Wednesday 20<sup>th</sup> June if you wish to avail yourself of their hospitality. Weeds of interest are Bridal Creeper, Boxthorn, Freesias & annual introduced grasses (maybe Coastal Wattle). Bring gloves, secateurs & maybe loppers.

Cath Houston 83567356

### Upcoming Field Trips

Date	Site	Species	Meeting Place
Sun, June 24, 2012	Placid Estate & Monarto	Mallee greenhoods	10am, meet beside Water Treatment Plant on Taillem Bend-Meningie Rd, (Princess Hwy) just off Dukes Hwy, south of Taillem Bend
Wed, July 11, 2012	Morialta CP	Adelaide Hills greenhoods	10am, Morialta Falls Car Park at end of Morialta Falls Rd
Sat, July 28, 2012	Sandy Creek & Altona	Corysanthes	10am, meet corner Barossa Valley Way and Williamstown Rd, Sandy Creek

**Reminder One:** We still require members as field trip leaders. Could you contact Rosalie Lawrence on 8294 8014 or email [nossaorchids@hotmail.com](mailto:nossaorchids@hotmail.com) if you are able to assist. Listed are the field trips requiring leaders.

Date	Location
Sat, Sept 15	Bassnett Road
Sun, Oct 7	Sandy Creek
Sat, Oct 30	Scott Creek
Sun, Jan 6	Adelaide Hills
Sun, Mar 24	TBA

**Reminder Two:** We still require members for helping the field trip leaders. Could you contact Rosalie Lawrence on 8294 8014 or email [nossaorchids@hotmail.com](mailto:nossaorchids@hotmail.com) if you are able to assist. See the website or the April Journal for details of dates and locations.

Contact: Bob Bates

## NEXT JUDGES MEETING

July Saturday 14<sup>th</sup> at Les Nesbitt's, 18 Cambridge St Vale Park commencing at 9:30.

## 2012 MEMBERSHIP NOTICE

Members who wish to pay 2012 Membership Fees electronically should e-mail NOSSA Treasurer on [nossatreasurer@hotmail.com](mailto:nossatreasurer@hotmail.com)

You will receive banking details so that you can complete your subscription. Please remember to include in your e-mail any change of address details. Marj Sheppard, Treasurer"

### ARTICLES / ITEMS FOR NEXT JOURNAL

Articles / items for the July journal need to reach the Editor by Friday July 6<sup>th</sup>.

#### ***Diuris behrii* Project**

**Les Nesbitt**

NOSSA has been asked to care for and propagate rescued *Diuris behrii* plants from Hillgrove Resources Mining Lease near Kanmantoo in the Mt. Lofty Ranges. The plan is to maintain the rescued orchid clones in cultivation for several years and to produce additional plants for reintroduction within the mining lease area each Autumn. A comprehensive recording and auditing system has been put in place to track each clone and any seed/daughter tubers/plants.

As I have experience with propagating this vulnerable species and spare space in my new shadehouse, I put up my hand to care for the orchids. The orchids were rescued in October 2011 by Hillgrove staff and members of the Kanmantoo Land Care Group and stored over summer at a contract nursery nearby. After I accepted the job I had to move fast to build benching to take the orchids. Bodo Jensen came to my rescue and provided several suitable mesh benches. Hillgrove's Environmental Advisor, John Crocker and I transferred the orchids to my shadehouse on May 17. There were 105 black plastic 3L bags in all. Weeds and other plants were removed leaving lilies and orchids. Each bag was given a numbered plastic label. An initial count revealed 83 *Diuris behrii*, 2 greenhoods and about 10-20 *Microtis* leaves. About half the bags had no sign of any orchids. A number of the *behrii* plants had been chewed and there was a tell-tale slug trail to be seen. A pellet of blue snail bait was put in each bag. Over the next few days I removed 3 large dead slugs, a small conical snail and several dead slater beetles. Within a week more chewed *behrii* leaves pushed up into view and after 10 days there were more than 120 *behrii* plants showing leaves. They had been eaten down below ground level. My intervention was timely or there may have been few orchid plants left to propagate. A follow-up count will be done at the end of July to pick up any late emergers as a few of the bags were still dry when delivered.

Ten flowering plants will be pollinated in Spring to obtain seed. These plants will not be disturbed this growing season. The seed will be used for flasking, sowing around potted mother plants and scattering on rehabilitated areas within the mining lease.

After flowering in September it is planned to remove the new tubers from the remaining *behrii* plants and to pot up the plants and old tubers to force them to produce additional tubers before going dormant. The largest new tuber will be kept as the original clone with any extras to be potted up individually for reintroduction in 2013. Several NOSSA growers have offered to help with this task. I have arranged to get a load of topsoil from the mine site stockpile for use when repotting.

At the first opportunity in spring or summer the orchids will be transferred to plastic pots. Bags may be OK for trees and shrubs but for small delicate plants like orchids there are too many hiding places for nasties that like to eat orchids. The bag tops had to be cut down so that the sun at its low winter angle could reach the soil surface and emerging orchid leaves. Also air movement is increased to dry the leaves after rain and prevent mould growth.

I am confident that if all goes well there should be 100 plus *Diuris behrii* daughter plants for reintroduction next year.

## **USING RAW SETTINGS IN DIGITAL CAMERAS**      **David Hirst**

(The subject of a demonstration given to NOSSA members at the February 2012 meeting)

To produce a JPEG or TIFF file, the computer inside the camera has to do quite a lot of calculations on the raw data to produce a picture file. These are carried out only once, and the result is what you see when you open the file in a picture editor program.

Higher quality digital cameras often have a RAW image format available in addition to the normal JPEG and TIFF. With a RAW format file these calculations are not done and all of the original data is saved to the RAW file. A RAW file is the resulting image as seen by the camera's sensor - think of it as like unprocessed film. Rather than letting the camera itself process the image for you (turning it into a JPEG or TIFF image), shooting in RAW allows you as the photographer to process the image to your liking. Applying adjustments to a RAW image is a non-destructive method of editing your photos, unlike editing a JPEG. You are using your computer to do the calculations such as sharpening, colour settings and contrast that the camera would have done if you'd saved in JPEG.

Some cameras such as my Nikon D300 can save both raw and JPG files simultaneously, and for many photographers this is an ideal solution. It provides a ready-to-use image for many applications, while a raw file is available for later and more comprehensive processing. The only downside to this double format is the extra space that it takes on memory cards. Some people complain that RAW files are too large, and that they take up too much space. With memory card, hard disk and DVD-R disks at all-time low prices the cost for storage is relatively small. It does require good record keeping though to keep track of all of these files, and good back-up and archiving procedures.

### **Reasons to Shoot JPG**

Files are smaller and therefore more of them fit on a card. For many applications image quality is more than sufficient (family snapshots, news images). Small files are more easily transmitted wirelessly and online. This is important to newspaper photographers. Many photographers don't have the time or inclination to post-process their files. Many cameras (especially digicams) can't shoot quickly when working in raw mode. Some lower-end models can't record raw files at all.

### **Reasons to Shoot RAW**

A RAW file is comparable to the Negative of an exposed but undeveloped piece of film. It holds exactly what the imaging chip recorded. Nothing more or less. This means that the photographer is able to extract the maximum possible image quality, whether now or in the future

**White Balance.** Rather than setting the value in the camera, when you shoot RAW you can use any white balance setting and be able to adjust it in post-processing. RAW files allow one to set any colour temperature and white balance one wishes after the photo has been taken without any image degradation. There is another tool available in 'Camera Raw' that provides white balance adjustment - the white balance dropper which can automatically adjust the colour temperature to make that component a true white. Capture NX gives a slider which can make further fine adjustments between cooler and warmer tones. It should be understood that once the file has been converted from the linear space and has had a gamma curve applied (such as in a JPG) white balance can no longer be properly done.

The RAW file is tagged with **contrast and saturation** information as set in the camera by the user, but the actual image data has not been changed. The user is free to set these based on a per-image evaluation rather than use one or two generalized settings for all images taken. If all photos require the same correction such as resizing these can be run as a Batch file and very quickly too. NOTE if your RAW file has been taken perfectly you are not obliged to make alterations and you can simply save the file as a JPG at whatever quality you wish (highest preferably).

Possibly the biggest advantage of shooting raw is that one has a 16 bit image (post raw conversion) to work with. This means that the file has 65,536 levels to work with. This is opposed to a JPG file's 8 bit space with just 256 brightness levels available. This is important when editing an image, particularly if one is trying to open up shadows or alter brightness in any significant way. Now imagine that you want to make a modest adjustment to the file in Photoshop or any other editing

program. Which would you rather have to work with, 47 levels or 384 levels done on a computer with a fast and powerful microprocessor? Clearly the 8 bit file will show posterization, which is the effect that one sees when instead of smooth transitions between brightness levels you see abrupt jumps.

Notice that as you adjust most of these settings, the **histogram** will also change. Your histogram is the most important tool in assessing your changes as they are made and keeps you on the right track. Keep it on the screen whenever you make any adjustments.

**Dynamic Range.** RAW files also offer an increased bit depth from JPEG files (16-bit vs. 8-bit), which means an increased dynamic range - that is, the range of light to dark which can be captured by a camera before becoming completely white or black, respectively. Since the RAW colour data has not been converted into logarithmic values using curves the exposure of a RAW file can be adjusted slightly - after the photo has been taken. Exposure compensation can correct for metering errors, or can help bring out lost shadow or highlight detail

Since **sharpness** depends on the intended viewing distance of your image, the RAW file format also provides more control over what type and how much sharpening is applied. Digital images that have not had sharpening applied look flat, low contrast and therefore unsharp. People want their out-of-camera JPGs to look good, and so USM (Unsharp Masking) is applied to the file by the camera. USM finds the edges between light and dark areas and enhances the contrast. In doing so halos are produced around the edges. If sharpening is set too high these halos will be visible in a final print. If they are set too low then sharpening may be insufficient. Cameras may have between 1 and 3 different sharpening settings that the user can choose. Raw converters often have slider so this can be a gradual process. Many of these adjustments were demonstrated during my talk.

If you are saving RAW files the camera creates a header file which contains all of the camera settings, including (depending on the camera) sharpening level, contrast and saturation settings, colour temperature / white balance, and so on. This raw image data the imaging chip recorded along with the so-called meta-data (the camera settings and other technical information) is now saved to the card. Some cameras compress these files, others don't. In any event if they are compressed it is done losslessly so that there is no deterioration of the file due to compression artifacts. (Some companies, Nikon and Kodak specifically, use a slightly lossy compression algorithm when saving RAW files). Saving your settings to a RAW file simply retains the information you added to it and this can be adjusted later without destroying the 'Original'. Compression is the final setting for a JPG file. JPG by definition is a lossy format. That means that to make smaller file sizes (which is the whole point of the JPG format) some data is thrown away. If compression is set to a low level (say 2:1) then there is very little information lost and it can be almost impossible to see any data loss. High compression will increasingly cause artifacts to become visible. Most cameras offer at least two or three compression levels. I always save my adjustments to a JPG file leaving the RAW file exactly as it was in case I need to return to it. However if you do save the RAW file the image is not changed by these settings, they are simply tagged onto the RAW image data.

**Raw Converters:** Every manufacturer provides software for decoding and processing their camera's raw files. In most cases this software is free and provided with the camera purchase. However these are often only specific to that brand. In other cases this is an extra cost program to be purchased separately. A couple such as high-end versions from Kodak and Nikon are quite good. The two best, [Camera Raw](#) converter that is now built in to Photoshop CS (it used to be available as a plug-in for Photoshop 7), and [Capture One](#) from Phase One. I use Nikon Capture NX as I have a Nikon camera and it is more affordable and does all I want and extremely well. I do not require (nor know how to use) the more advanced capabilities of the more expensive programs. Capture One supports most major DSLRs while Photoshop CS now supports virtually every DSLR and digicam on the market, with updates for new models appearing as new cameras are released. The major differences between these programs is that you currently need the full Photoshop CS program to use Camera Raw, while Capture One is a stand-alone program that can export converted RAW files to subsequently be used with any image processing program. Capture One is also

available in different versions for different camera types, with the version for low-end DSLRs costing the least, and that for high-end Pro models the most. To my knowledge it comes with a 60 day free-trial.

### **In Summary**

So which is better: RAW or JPEG? There is no single answer, as this depends on the type of photography you are doing. In most cases, RAW files will provide the best solution due to their technical advantages and the decreasing cost of large memory cards. RAW files give the photographer far more control, but with this comes the trade-off of speed, storage space and ease of use. The RAW trade-off is sometimes not worth it for sports and press photographers, although landscape and most fine art photographers often choose RAW in order to maximize the image quality potential of their digital camera

All your conversions are done on a fast powerful computer at your convenience and can be 'fixed' in ways which would be very difficult without the raw sensor data. You get the full range of data from the sensor. As you have not 'lost' any data you can change your mind about some of the picture settings after you have taken it. Because a raw file has not been processed in any way, if new and improved methods of linearizing files, applying colour filter array decoding, or other image processing advances are made, you can return to your archived raw files and work on them afresh for the best possible image quality. A JPG file, on the other hand, is fully baked. With a JPG file you are largely committing yourself at the time of exposure to several of the most important aspects of image quality, namely white balance, overall contrast, colour saturation and the like.

## **POST FIRE SURVEY – FAIRVIEW and BIG HEATH CONSERVATION PARKS, 2011**

**Cathy Houston**

**(PART 2- Continued from last month)**

### **BIG HEATH CONSERVATION PARK**

The burn area in Big Heath Conservation Park was several kilometres in along tracks inundated with water. Accessing the location presented a bit of a challenge and meant once we arrived there we did not continue to the western end since this would have further damaged tracks in the park. The area appeared to be Melaleuca swampland that had been quite dense. Black skeletons were hard to negotiate. Some members turned out quite black at the end of the survey.

Two significant orchids were seen during the survey. *Microtidium (Microtis) atratum* was exciting to see in a wet corner retaining water for a long time. With a state rating of rare, this species is not often seen these days, except following fire when it is stimulated to flower. The other species of note in the burn was *Arachnorchis (Caladenia) venusta*, listed state-wide as vulnerable. Although early in the season for the Graceful Spider Orchid one specimen was in flower. This magnificent, white, sweetly perfumed orchid presented as a stark contrast to the blackened stems in the area.

The main species present in this type of habitat were those that have a preference for damp, poorly lit areas such as *Corysanthes (Corybas)* and *Pterostylis pedunculata*, together with *Microtis*. These species were common throughout the area. It was too late to determine what species of *Corysanthes* were present, as they had flowered a couple of months before. Seed capsules are not often seen, but a few very tall specimens were present in unburnt areas. Examples on stems up to 225 mm were seen.

A number of *Thelymitra* species were found towards the southern end of the burn. *T. rubra* was the most plentiful of these, with *T. flexuosa*, *T. antennifera* and *T. benthamiana* also well represented. A few colony species were present in small numbers, viz. *Pterostylis nutans*, *Cyrtostylis reniformis* and *Pyrorchis nigricans*.

A short time was spent surveying the unburnt heathland. Four members had also spent several hours on a previous visit. The heath is rich with orchid species. Of note is the

occurrence of *Arachnorchis colorata*, the nationally listed Colourful Spider orchid. These were seen in late flower as well as healthy capsule. Previous visits have noted *Prasophyllum* sp. Gum Lagoon in the heath. A single plant of the elegant *P. elatum* was in flower on the day of the survey. The common and abundant species in this section of the park are *Corysanthes (Corybas)*, *Glossodia major*, *Pterostylis pedunculata* and *Caladenia carnea*.

Another section of the park was a boon for orchids, a natural piece of classic grassy woodland, something not often encountered in good condition in South Australia. This was a pleasure to experience. Some of the orchids found here in good numbers were *Caladenia carnea*, *C. prolata*, *Arachnorchis necrophylla*, *Corysanthes (Corybas)* sp., *Diuris orientis*, *Leptoceras menziesii*, *Microtis* sp., *Thelymitra juncifolia*, *T. antennifera*, *T. flexuosa*, *T. rubra* and *Pterostylis pedunculata*. It was interesting to note the colony of *Leptoceras* with more than fifty flowering plants, the flowers being almost pure white (just some with pale greenish-yellow tips to the petals). Had flowering been promoted by the prescribed burn, quite some distance away? They are a species requiring fire to stimulate flowering.



MH. *Prasophyllum*

## DISCUSSION

Due to access issues it was felt we did not necessarily cover all the areas of the burn we would like to have surveyed. However, a fair representation of orchids in the swampy/moist habitats was located. *Pyrorchis nigricans* had not attempted to flower, but there were very few present in the location. However, immediately outside the burn the flowering of *Microtidium atratum* may have been aided by the effects of fire.

There was a wide incursion of weeds (mostly pasture grasses) on the northern edge of the burn. It could be that these become more embedded in the native vegetation. One area of Bone seed (*Chrysanthemoides monilifera*) was located on a small limestone knoll. There were a couple of parent plants and many seedlings. These were removed by one of the surveyors, but there could be other undetected outbreaks like this one.

Habitat in the area of the burn and in the adjacent *Melaleuca* swamp looked very suitable for one of the South-East's rarer orchids, namely *Stegostyla (Caladenia) gracilis*. [This species has recently been recognised as a Tasmanian endemic; the mainland one is now *S. moschata*.] The species is found in nearby Mary Seymour Conservation Park in similar habitat. Surveyors were mindful of this while working but did not locate this species. It is a large area to cover.

As previously mentioned, the woodland/heathland area is orchid rich with at least one species of special note (*A. colorata*). Also, the grassy woodland is a rare piece of habitat in very good condition. This park has many more secrets yet to be revealed, access to such a wet area being one of the main drawbacks for surveying. We hope in the future to be able to add more to our knowledge of this park.

## ORCHID SPECIES LIST

	Fairview C.P.	Big Heath C.P.
<i>Acianthus pusillus</i>	✓	
<i>Caladenia carnea</i>	✓	✓
<i>Caladenia latifolia</i>	✓	✓
<i>Caladenia prolata</i>	✓	✓
<i>Caladenia pusilla</i>	✓	

<i>Caladenia pygmaea</i>	✓	✓
<i>Arachnorchis</i> (Caladenia) <i>colorata</i>	✓	✓
<i>A.</i> (Caladenia) <i>dilatata</i>	✓	
<i>A.</i> (Caladenia) <i>necrophylla</i>	✓	✓
<i>A.</i> (Caladenia) sp. South-East	✓	?
<i>A.</i> (Caladenia) <i>tentaculata</i> or <i>A. tensa</i>	✓	
<i>A.</i> (Caladenia) <i>venusta</i>		✓
<i>Calochilus platytilus</i>	□	✓
<i>Corysanthes</i> (Corybas) sp/spp.		✓
<i>Cyrtostylis reniformis</i>		✓
<i>Cyrtostylis robusta</i>	✓	✓
<i>Diuris orientis</i>		✓
<i>Diuris sulphurea</i>		✓
<i>Eriochilus cucullatus</i>		✓
<i>Glossodia major</i>	✓	✓
<i>Leporella fimbriata</i>	✓	✓
<i>Leptoceras menziesii</i>		✓
<i>Microtidium</i> (Microtis) <i>atrata</i>		✓
<i>Microtis arenaria</i>	✓	✓
<i>Microtis frutetorum</i>		✓
<i>Microtis parviflora</i>		✓
<i>Microtis</i> sp.	✓	
<i>Prasophyllum elatum</i>	✓	✓
<i>Prasophyllum</i> sp. Gum Lagoon	✓	
<i>Prasophyllum</i> sp.		✓
<i>Pterostylis nutans</i>		✓
<i>Pterostylis pedunculata</i>	✓	✓
<i>Linguella</i> (Pterostylis) sp. Mallee nana	✓	
<i>Plumatichilos</i> (Pterostylis) aff. <i>plumosum</i>	✓	?
<i>Plumatichilos</i> (Pterostylis) <i>tasmanicum</i>	✓	
<i>Pyrorchis nigricans</i>	✓	✓
<i>Thelymitra albiflora</i>	✓	
<i>Thelymitra alcockiae</i>	✓	✓
<i>Thelymitra antennifera</i>	✓	✓
<i>Thelymitra benthamiana</i>		✓
<i>Thelymitra flexuosa</i>		✓
<i>Thelymitra hiemalis</i>		✓
<i>Thelymitra ixioides/ juncifolia</i>	✓	✓
<i>Thelymitra pallidifructus</i>	✓	✓
<i>Thelymitra peniculata</i>	?	
<i>Thelymitra rubra</i>	✓	✓
<i>Thelymitra</i> sp. Insioid		✓
<i>Thelymitra</i> X <i>macmillanii</i>	✓	
<i>Thelymitra</i> sp/spp.	✓	✓

## **Why *Oligochaetochilus* Szlach. must be regarded as a genus separate from *Pterostylis* R.Br ( both in the *Pterostylidinae*).**

**R. Bates**

This is the third in a series of articles by R. Bates, the other two published in recent issues of this journal, the most recent dealing with *Bunochilus* Jones & Clem.

The segregation of up to fourteen genera from the greenhood genus *Pterostylis* is now a decade old and despite DNA, cytological, biological, logistic and morphologic reasons for accepting these segregate genera this has not been realised at the time of writing this.

I was recently asked if all of the *Pterostylidinae* segregate genera should be accepted. The answer is simply no! DNA evidence does not support them all. As expected by many of us the single species of the genus *Petrorchis* has been proven to belong in *Speculantha* and it is likely that *Taurantha*, *Linguella* and *Eremorchis* will all prove to be subgenera of *Diplodium*.

DNA, Cytology, morphology and physiology of most other genera proves them not to belong in *Pterostylis*: and *Oligochaetochilus* is one of the most distinct genera of all.

*Oligochaetochilus* described by Szachetko in 2001 can not be accepted at mere subgenus level as the work of Clements et al (201) on DNA clearly proves it a valid genus, distinct at many levels.

Jones and Clements 2002 point out that as known by field orchidologists for twenty years the *Oligochaetochilus* or Rufous hoods can be recognised by all species being multiflowered, the plants monomorphic, never clonal, the leaves sessile in a scape - encircling, basal, ground hugging rosette. The cauline leaves of *Oligochaetochilus* are reduced to scape-hugging bracts. The lateral sepals of the flowers are deflexed, the labellum highly mobile and sensitive, set outside the galea, with an enlarged basal area with no obvious appendage, the labellum margins with white moniliform setae (whiskers); these setae also on the sepals.

As shown by Warcup pers comm in the 1970's *Oligochaetochilus* species prefer a different set of mycorrhizal soil fungi to *Pterostylis* and have an obviously different pollination strategy with their trigger-set, insectiform labellum.

Their phytogeography indicates requirements of less rainfall and shade than any other *Pterostylidinae* and with its distribution across southern Australia the genus may have originated in what is currently South Australia. It is its tolerance of an arid climate that has enabled it to spread right across southern Australia as they are proven desert hoppers.

With an estimated 100 species at time of European settlement *Oligochaetochilus* is a large and successful genus, very sensitive however, to changes in the landscape brought about by humans. Species do not appear to like fire and as the majority of species already live in dry areas they are seriously affected by declining cool season rainfall of the last fifty years and are prone to local extinctions. The whole situation is exacerbated by overgrazing from cloven hoofed livestock and feral goats as the flat leaf rosette is prone to disease when crushed by their hooves.

With so many undescribed taxa the genus needs to be recognised so that species when named can be accorded full status under the published name. If they are all regarded as *Pterostylis* I fear that no further taxonomic work will be done on any of the rapidly disappearing unnamed taxa.

As pointed out by many authors including Clements 2011 the *Pterostylidinae* are not the only orchids to possess a galea or hood, others include *Disa* and *Disperis*; this for all readers who think that it would be best for all hooded orchids in the world to be one genus.

Attempts to produce man made inter-generic hybrids with *Oligochaetochilus* have failed and there are no such natural hybrids despite the overlap in pollinators; further proving the disparity between it and other greenhood genera.



### Further references

MA Clements et al (2011) Phylogenetic relationships in Pterostylidinae, *Australian J. Bot.* vol 59.

DL Szlachetko( 2001) *Polish Bot. J* 46 (1): 30