*Nepenthes glabrata*  
*Utricularia gibba*  
*Nepenthes ramispina*  
*Utricularia uniflora*  
*Utricularia uliginosa*  
*Drosera lowriei*  
*Drosera intermedia*  
*Utricularia australis*
Annual Subscriptions

- **Australian membership**: $20.00
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AUSTRALIA

Journal articles, in MS-Word, ready for publication, may be Emailed to the Editor or Secretary.

Meetings

Most VCPS meetings are held in the hall at the rear of the Pilgrim Uniting Church on the corner of Bayview Road and Montague Street, Yarraville – Melway map reference 41K7. These meetings are on the fourth Wednesday of the month at 8 PM. However, some meetings may be at the home of members during a weekend. Details of meeting dates and topics are listed in each journal. If unsure of the location or date of any meeting, please ring a committee person for details.

The VCPS Annual General Meeting, usually held at Yarraville in June, provides substantial benefits for each and every member able to attend.
The VCPS Annual General Meeting has now been and gone, and congratulations to those who have volunteered to take on new roles. Due to increased work commitments, I chose not to stand for re-election as President. Our former Vice President, Steve Fretwell, has stood up to the plate, and I feel sure that he will do an excellent job as the new President.

But what have I done? I somehow scored the job of General Secretary. Talk about going from the fat to the fire! I certainly have big boots to fill, following the resignation of Gordon from the position (after a 15 year reign!).

The last three years have been rewarding and enjoyable for me. I have been lucky enough to have gone through a period when the strength and reputation of the society has grown. We are lucky that the VCPS doesn’t suffer from the political in-fighting that many other clubs and societies often seem to have. This is due largely to the work of the committee members, as well as the ordinary members who are never shy to put their hands up to undertake a required task. For this, I would like to thank all members for their support and encouragement during my period as President. Importantly, we all seem to have the same goal – to enjoy carnivorous plants!

I look forward to the Society’s continued growth over the next few years. I’m sure that all members will give Steve the support, help and respect that they were kind enough to give to me.

Cheers for now, and happy growing.

Regards
Paul Edwards
Growing Nepenthes – Part 2

Paul’s Nepenthes hamata (centre) a previous VCPS Grand Champion plant. Photo: Paul Edwards

Paul’s Nepenthes greenhouse built with polyflute. Photos: Paul Edwards

I find a small piece of shade cloth works well, or you can use a handful of sphagnum. Some growers use pieces of fibreglass (like ceiling bats) or rock wool. It doesn’t really matter what you use, as long as it’s fairly neutral and does the job.

FERTILISER
Nepenthes, unlike some CPs, will benefit from mild fertiliser application. Use one that’s specially formulated for Australian native plants, as it’s low in phosphorous. CPs get their phosphorous from the insects they catch, so additional applications may cause the plant to stop pitchers. However, if you are potting in straight sphagnum, you may find that the fertiliser will kill the sphagnum, and cause it to rot away much faster.

With my peat/orchid bark mix, it doesn’t cause it to rot, however it does certainly promote moss growing on the top of the pot. When this gets too thick, it can be quite easily removed, and the pot top dressed with some fresh mix. Or, if you’re patient enough, you can paint the leaves of the plant with clean paint brush dipped in liquid fertiliser.

If you do plan to fertilise, always use half strength, and only fertilise every second month or so while the plant is actively growing, and not at all during winter when it slows down a bit.

REPOTTING
Every year or two, it is beneficial to repot the plant. This is especially important if you water using mains water, rather than rain water (see the watering section below). By repotting, it freshens up the mix and gives your plant a bit of a boost. Also, pots can get a bit grotty after a while, and having a great looking, clean pot compliments the plant.

PAUL EDWARDS

Last issue I covered temperature and humidity. If you’ve got this right, you’re certainly on track for growing healthy, large, show-winning plants! But there’s a few other important things that should be looked at.

POTTING MIX
From my own personal experience (and what works for me) I use the following mix – 4 parts sphagnum peat moss (not sedge peat or any other kind of peat), 4 parts fine orchid bark mix and one part fresh sphagnum moss. I don’t heavily pack the mix into the pot, but leave it nice and open. This mix is long lasting, and the dark nature of the mix gives some lovely colours in the pitchers. Other growers grow Nepenthes very successfully in straight sphagnum, however personally I find that this tends to rot down fairly quickly, and you are constantly repotting your Nepenthes. Also, I find the sphagnum doesn’t tend to colour the pitchers to the same degree.

pH is also important, as Nepenthes (like most CPs) enjoy a slightly acidic mix. Peat moss, being fairly acidic, lowers the pH to a suitable level.

Always put something in the base of the pot to stop the mix washing out.

Two of Paul’s greenhouses.
Of course, with higher light levels usually comes high temperatures. As discussed last issue, steps need to be taken to increase the humidity as the temperature increases. However, *Nepenthes* don’t need as much light as say Venus Flytraps or *Nepenthes*, so you may need to provide some kind of compromise if you grow all these together.

**WATER**

Ideally, water should be pure rain water. If possible, catch it off your roof into a tank. However, beware of doing this if you live close to the beach. The salt content may be even higher than mains water! If you can’t catch it off the roof, water can be left to stand for a day or so to allow chemical such as chlorine to dissipate. But if you have a large collection, this may not be feasible.

Water by mains supply if you have to, and be resigned to the fact that to get really good plants you will probably have to repot every year, to stop the gradual build-up to chemicals in the pot.

Never sit your *Nepenthes* in a water tray, like many other CPs enjoy. As soon as the roots hit the water, they will rot and you’ll lose the plant. The plants like to be kept permanently damp to wet (depending on the variety), and I water by overhead sprinklers twice a day for 5 minutes during summer, and gradually cut back to a couple of minutes every second day during winter.

**PROPAGATION**

Once your plants grow up a little, you’ll no doubt be eager to propagate them, either to increase your own collection, or to share with your friends (much better idea!). Seed collection is not hard with *Nepenthes*, however *Nepenthes* are ‘dioecious’ – that is, each plant is either male or female. Obviously, you need a male plant and a female plant to get seed. Unfortunately, there’s no way to tell the sex of a *Nepenthes* until it actually flowers! Upon gaining seed, sow while fresh in your normal potting mix, and protect with a propagating cover or plastic bag.

An easier way is to take cuttings. When your plant gets large, it will produce quite long vine like stems, with leaves emerging every couple of centimetres or so. At the base of each leaf, you will notice a ‘basal' shoot. This looks like a small bud, and sometimes actually grows and sometimes doesn’t.

If you cut off this long stem about 3-4 leaves above soil level, the main plant will then put out these basal shoots and keep growing. The long vine can then be cut into several pieces, each containing one or two leaves. Pot these up, and cover with a suitable clear container such as a coke bottle with the bottom cut off, or a plastic bag. This will provide high levels of humidity, and fairly soon you should notice the plant growing from the basal shoots.

In conclusion, following these simple instructions has certainly worked for me in being able to grow large, strong, healthy and beautiful plants. Unfortunately, often the same recipe doesn’t work the same for every grower. You may well find that other things work better for you. If so, jot down your ideas, and submit it to the journal. I’m sure others would love to know!

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In the middle of March I had to head up to Sydney on a business trip. While I was up there I thought I’d take the opportunity to visit a friend who had offered to take me to visit some great carnivorous plant (CP) sites. On the journey up I found myself wondering which CPs we’d find as I usually search for CPs between July and February in Victoria.

After arriving in Sydney I met up with my friend Greg and he explained that he knew a few great locations on the way back to his house that we could stop and explore.

The first location we visited was on top of a rock slope between Waterfall and Helensburgh at the edge of the Princes Highway. As it was the end of summer the area was bone dry, yet in the crispy moss growing at the edges of the rocks, much to my astonishment we found some CPs! There were a few crimson red *Drosera binata var. T* forms, *Drosera spatulata* (white and pink flower forms), and some remarkably tough *Drosera pygmaea* growing in the cracks of the rock slope. Greg explained that this area received a lot of run-off water when it rains and is permanently wet in winter through to spring. *Utricularia uniflora* can also be found growing there.

The next location we visited was Waterfall, where we drove down though some thick bushland until we reached a large dam called Toolooma Lake. Once at the dam wall we crossed along the top, pausing to look at a few large free floating clumps of *Utricularia gibba* along with several flowering waterlilies growing in the middle of the dam. As we reached the other side, we were greeted again by *U. gibba* growing amongst the reeds, in the shallows this time. Greg wasted no time in rolling up his shorts and jumped straight into the water for a closer look. Meanwhile I decided to work my way around the water to approach them the dry way.

Upon closer inspection there were also large mats of *U. gibba* growing throughout the shallows and flowering profusely. The flowers were a rich golden yellow, borne on scapes poking out of the water to a height of approximately 5cm tall.

Nearer the shoreline we also found *Utricularia uliginosa* in flower, displaying small purple-violet flowers with a distinctive lined palette. The scapes were up to 10cm tall, with several of the plants adopting a twining habit for support like some other affixed aquatic *Utricularia*.

After exploring the shoreline we then headed for a small creek on the lower side of the dam wall, suddenly stopping when we found some *U. uniflora* in flower growing on the side of a clay embankment. The flowering season had almost finished, but I was happy as this was the plant that I was hoping to find in flower. It has a stunning broad mauve palette and is quite distinct from the *Urticaria* I’m more familiar with in Victoria.

As we moved further down away from the dam wall, small patches of *U. uliginosa* could be seen growing in clumps wherever the soil collected on the rocky path. We also passed a couple of small pools of water in which you could see elongated leaves of *U. uliginosa* growing aquatically and drawn out by the filtered light. *D. spatulata* became more

The three Carnivorous plant habitats we visited in NSW. (from left): Princess Highway between Waterfall and Helensburgh, Toolooma Lake and Maddens Plain.

**NSW natives**

A business trip to NSW turns into a great opportunity to explore for some native CPs.

**STEPHEN FRETWELL**

...
common with a couple reaching 5cm in diameter in the shade of overhanging trees which amazed me, as I have never seen them larger than 3cm. The *D. spatulata* could also be seen on higher ground growing in much drier and brighter conditions. These plants were smaller than the ones seen prior but the rosette had formed a column of old leaves up to 2cm high. *D. pygmaea* was also scattered around these areas but they grew mainly in the drier patches.

Finally we reached the creek bed which was little more than a trickle. Greg said he had never seen it this low before. We walked along the creek bed for a while in search of *Drosera binata var. dichotoma* which grew along the creek, but the conditions were forcing the plants into a semi-dormancy and it was difficult to find plants with anything more than a couple of healthy leaves.

As we dodged small pools of water, we could see *U. uliginosa*, *D. pygmaea* and *D. spatulata* all growing along the banks. The *D. spatulata* along the creek had more elongated petioles than plants up along the dam wall and the *U. uliginosa* flowers varied in colour from a pink-purple to a mauve-blue.

Upon leaving, I realised what a fantastic location Waterfall was with such a great diversity of CPs. Greg told me that tuberous *Drosera* also grow here, although we didn’t see any on this occasion.

The final location Greg and I visited was a small creek which ran under the F1 Freeway at Maddens Plain which he hadn’t fully explored. It looked like a suitable habitat for CPs and I agreed with him that it was worth a look.

The trek down to the creek was a little hard going as we made our way through thick tea-trees and grass until we reached the open area around the creek. We were instantly rewarded by finding *D. spatulata*, *D. pygmaea* and *U. uliginosa*. As we searched the banks we discovered more large red *D. spatulata* with rosettes again reaching 5cm in diameter. Strangely, these plants were growing in an open area in full sun. Continuous seepage from the embankment must have enabled them to reach such a large size.

While I photographed the *D. spatulata* Greg discovered something uncommon in the area — *Utricularia dichotoma*, with its stunning dark purple flowers. He also found a nice pale form of *U. uniflora* and a few patches of *D. binata var. dichotoma* with large leaves growing in thick grass on the bank of the creek.

After taking lots of photos of these on my digital camera we headed back to the car, amazed at how successful our day had been. We had found 7 varieties of CPs not only growing but flowering in the middle of March. This was my first experience looking for CPs in NSW but it will definitely be one I won’t forget. Thanks for the awesome tour Greg.
Experimenting with aquatic carnivorous plants

GREG BOURKE

For the collector of carnivorous plants, it is difficult, often impossible to supply their beloved plants with the natural food source. Although most species will grow well without a source of animal fertiliser, the aquatic species rarely grow well without it. This however can be easily solved.

After discussions with Laurent Legendre in 2003 on the cultivation of aquatic Utricularia, I began experimenting with various cultivation techniques for aquatic Utricularia species. Laurent had told me that when living in France he had successfully cultivated aquatic Utricularia vulgaris by adding cut grass clippings to a water vessel. This quickly enriches the water turning it a bright green/yellow colour. The resulting soup can then be seeded with crustaceans such as Daphnia, Cyclops and Ostracods. The crustaceans breed rapidly providing the perfect fertiliser for aquatic carnivorous plants. This worked well in a tank with a layer of peat on the bottom but the system was very unstable. A pH buffer (Bullseye 6.5) was used to stabilise the pH and aquatic snails were added to control algae but the system still required more attention than I was willing to give it.

Then came a publication by Doug Darnowski on the ease of cultivating Aldrovanda vesiculosa using hyacinth plants (Eichhornia crassipes) as a pH buffer. This was exactly what I needed.

In 2004 I purchased a 45 litre black plastic box which was perfect for my aquatic carnivorous plant cultivation. I placed the box in a position where it would receive maximum exposure to sunlight and filled it with rain water. In the bottom I placed some fresh grass clippings stuffed inside a pair of my old stockings. This was weighted down with a brick and within two days, the water was bright green. Crustaceans were added and the system was allowed to sit for three days.

Because hyacinth is considered a noxious weed in Australia, I chose a mix of Nardoo (Marsilea costulifera), Knotweed (Persicaria decipiens), Water Ribbons (Triglochin multifructum) and Azolla as my stabilising plants simply because I had them but most wetland plants would be appropriate. I recommend steering away from Sedges and other plants that readily set seed as they may become invasive. Water snails were also added as an algal control and as food for the Aldrovanda vesiculosa. Utricularia australis and Aldrovanda vesiculosa were added as soon as the water was settled. Within one day almost every available trap on both carnivorous plant species was filled with prey and within one week, both plants had doubled in size. Not just in length but in girth also and with an increase in girth comes an increase in trap size!

Many months later the system is still stable (pH 6.5). I have removed the old grass cuttings and replaced them with new ones. This should be done every two to three months for the carnivorous plants to continue to thrive. Dragon fly larvae can be found as well as other insect larvae which the plants can’t eat but they appear to be doing little harm.

This method of cultivating aquatic carnivorous plants took less than a week to set up and once settled required little attention which is just what a carnivorous plant needs to survive in my collection. There are probably some changes that could be made to make the system better and it may also be adapted for the affixed aquatic Utricularia species like Utricularia biloba and Utricularia beaugleholei which I have just introduced to the system.

References


At our annual show in December last year I swapped some tuberous Drosera with a friend for a late-growing form of Drosera gigantea ssp gigantea which was still in full growth at the time.

After I brought the plant home I noticed that there were many strange stolon-like nodules on the leaves. They were growing from the front side of the leaf where the glands are located. Upon closer examination these nodules appeared similar to lateral stolons produced by some of my other tuberous Drosera.

This intrigued me, so I decided to experiment by cutting off a couple of branches that had the stolon-like nodules, I placed them on some moist sphagnum in a sealed container with my Nepenthes hoping they would grow.

A couple of weeks later when I checked the branches I had cut off, I discovered that the stolon-like nodules had continued to develop and were now forming small tubers. This inspired me to inspect the parent plant. In addition to the original stolons I found new stolons growing from the leaves.

Now that I knew that my experiment with the stolons produced tubers, I decided to try and propagate some more. I placed the parent plant in a small sealed plastic greenhouse which was located in a shady position facing south and received sun only until about 10am.

Alongside the D. gigantea ssp gigantea I placed three 3’ tube pots filled with live sphagnum moss. Using a layering technique of propagation, I placed the still attached branches on the sphagnum and carefully buried the stolons to keep them moist and prevent them from perishing. I then pinned the branches down with a U-shaped piece of wire to secure them.

As the weeks passed by, the stolons slowly produced tubers that kept growing until the parent plant went into dormancy in early March. By this time the parent plant had produced daughter tubers in the sphagnum, and due to the high humidity had also produced them in mid-air.

After the parent plant had been dormant for about one month I cut the daughter tubers that had formed in the air off the branches. I then searched through the sphagnum for the others I had propagated. In total I collected 22 tubers that grew from the stolons on the leaves of the parent plant. Most of them were small and around 2mm in diameter but several grew to 3.5mm and a couple even reached 5mm.

One drawback was that this form of propagation affected the size of the parent tuber. My friend – the source of the plant – told me that the tuber had been larger the previous year than what it developed into this year. For this reason this may be a procedure that you only try every few years so that you don’t exhaust the parent plant.

However, compared to growing D. gigantea ssp gigantea from seed, the layering method is definitely a very effective way of producing lots of tuberous Drosera this method will work on, but I might experiment with the procedure on a few others and see how they go.

Unusual Propagation

STEPHEN FRETWELL

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Fred offers a wide variety of plants and seeds.
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Contact him for his latest list of stock available.
When I first heard about carnivorous plants I really wanted to have one. At the age of 12 my dad told me that they can be found growing at a place called Crane’s Swamp which is 30 km southwest of the town of Żary in Poland.

On the 20th of October last year I finally was able to visit the area. I remembered what my father had told me about Crane’s Swamp I started to search for information on the internet. After I had found exact information about its location, I asked my father to take me there. It wasn’t easy to find this bog even with a good map, we spent half an hour driving around the area searching for it. When we realized that we could not locate it we decided to ask my father’s friend, who was a forester at the swamp. He gave us directions on how to get to there. Following the foresters instructions we tried again and eventually found the correct place.

I was really delighted. I couldn’t wait any longer to see all the sundews the swamp is known to contain. As we approached the swamp I realised how large the bog actually is. There were a number of pine trees growing throughout. At the beginning I found only Drosera rotundifolia in living sphagnum. As I searched other areas of the bog the sphagnum began to disappear. The Drosera rotundifolia were also beginning to become scarce. After much searching I found Drosera intermedia growing on peat. Afterwards I found many more clusters of Drosera intermedia. I was amazed at the sight of the plants.

Later, when my best friend Łukasz from Warsaw came to visit me, we went there again. He brought his digital camera with him and took many beautiful photographs. A small amount of seed was collected to introduce the plants into cultivation.
MEETING TOPICS & DATES for 2005
VICTORIAN CARNIVOROUS PLANT SOCIETY

This year we have scheduled the following discussion topics, and events:

January (22nd)  Darlingtonia, Dionaea, Pinguicula
(Saturday at Yarragon).

February (23rd)  Sarracenia species and hybrids, beginners night.

March (23rd)  Nepenthes, Heliamphora, and Brocchinia.

April (27th)  Drosera, video and information night.

May (25th)  Growing conditions, pygmy Drosera, ‘best’ and ‘worst’ plants, gemmae collection.

June (22nd)  AGM, plant give-away, any CPs.

July (27th)  Seed growing and tissue culture, potting demonstration, any CPs.

August (24th)  Tuberous Drosera, show preparation, displays, and companion planting.

September (28th)  Cephalotus, pygmy Drosera judging, swap night.

October (23rd)  Field trip to Triffid Park (Sunday afternoon, commencing with barbecue lunch).

November (23rd)  Byblis, Drosophyllum, Genlisea, Utricularia.

December (TBA)  Annual show at Collectors Corner.

Please note: All meetings, other than those where a specific venue is given, will be on the FOURTH WEDNESDAY of the month in the hall of the Pilgrim Uniting Church in Yarraville – corner Bayview Road and Montague Street, Melway Map Reference 41K7.