

British Cactus & Succulent Society

Southampton & District Branch Newsletter

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Editorial

The weather has warmed up noticeably in the past couple of weeks, with a number of sunny days. My collection of cacti is much smaller than it used to be, but I did notice a *Weingartia* and a *Mammillaria* in flower. I think my *Rebutias* are sulking due to not having enough light so I need to reposition them nearer the windows.

Announcements

Alice is part of a garden club at her son Wesley's school, and they are trying to revive and replant a rockery. If anyone in the branch can donate hardy low maintenance plants (e.g. *Sedum*, *Sempervivum*) which would be safe for young children (aged 4-9) please have a word with her.

Portsmouth branch have invited our members to their Summer Social, which will be held on 11th August at Maggie Maddock's house. Maggie will provide soft drinks, tea, coffee and cakes, and you can also take along any other food you want to share. There will be some seating but please bring along any folding chairs you have. The address is: 37 The Thicket, Widley, Waterlooville, PO7 5JL (2pm – 5pm).

A reminder for you to record your names on the sheets at the front if you are interested in attending either the South West Mart at Bristol (end-June) or the Oxford Show (July) and are willing to car-share with others.

During today's meeting, David will be handing out the "free plant" that we give to our attendees every year. For this year, the plant is *Mammillaria plumosa*. All that you have to do is grow the plant on, and potentially bring it along to our future cultivation evenings.

Last Month's Meeting

Cultivation & Propagation Workshop

Adrian started off the meeting by asking if people had started watering their plants. Paul Klaassen mentioned this is around the time of the year when he puts his plants outside, until the end of September, when he brings them in. They can be quite heavy at that time, especially if they are wet. A few plants can be left out all winter without protection, but that list is fairly small. Alice mentioned she had experienced frosts three times in the last week! So she didn't consider it not safe to putting things that are tender out at this time. Her potato plants were frost bitten, and a beech hedge had also suffered. Her wisteria was only just opening its blooms.

Adrian said most people have electric heating in their greenhouses and they perhaps set the minimum temperature to 5°C-10°C. He keeps an eye on the night time temperatures. He also likes to have air circulating in the greenhouse, so he only places trays of plants on the top shelf - everything else is placed on slats, to allow the free movement of air. Richard White said he also places his plants in trays and these could potentially affect the air flow - but he has a couple of fan heaters which can be used in "fan only" mode and so in the summer, he has these connected up to a thermostat to allow them to come on when the temperature exceeds 25°C. Mike Shaw mentioned that avoiding the use of trays would also allow more light to fall onto any plants being grown at lower levels.

Adrian introduced Tom Radford who had been concerned about the accuracy of the thermostats on his fan heaters, and also for the potential of those thermostats to be affected by self-heating. He decided to invest in a temperature recorder/logger which can measure the temperature and record the values, for later analysis. Elitech make several models, and these are often used by companies which operate cold stores – they need to keep records for health reasons. The frequency of recording is user controllable, and the units can record readings every minute or less frequently, and he had set his unit to log the temperature every 20

minutes (so 72 readings per day). The units can typically store between 16000 and 32000 measurements, they are accurate to +/- 1°C or better, and you can download the data from the logger to a PC.

Tom showed graph plots prepared from the data from the logger. After checking the results, he got a separate thermostat control and now has better control of the temperature. These temperature logging units cost from £15 upwards. Some measure temperature only, but there are other models which can measure humidity as well. He now has a couple of these units and he used one to monitor the outside temperatures as well, this allowed him to see how low it was getting during the winter months. He mentioned that since 30th January, the lowest temperature he has seen outside was -5°C. Paul Klaassen mentioned that Rudolf Schulz had done an experiment some years ago, where he had placed one of these data loggers in the middle of a clump of Copiapoa in Chile. The unit had recorded temperature, humidity and light levels for many months until it was retrieved, and the data was published in an issue of the Copiapoa magazine in 2006.

Adrian mentioned he had recorded some days last year where temperatures had exceeded 40°C in his greenhouse - so he was going to try and use some shading on the glass, to see if he could lower the maximum temperature this year. A member of the audience mentioned roller blind shading which was motorised and controlled via a thermostat – this might be one way of limiting temperatures in the summer months. Peter Down said he used to leave the doors open on his greenhouse but it seems that his neighbour's cat loves his greenhouse - especially when it's raining outside, so he's been forced to install some wire mesh to keep the cat out. Ivor mentioned a sparrow hawk had entered his greenhouse once!

Next it was Richard's chance to talk about some plants he had brought in. At each month's meeting we usually have a table show and this includes a class for any plants in flower but this had been cancelled for this month because of the cultivation meeting. He had brought along some a couple of Easter Cacti – these are epiphytic cacti which come from the jungle areas of South America. They don't like their roots to dry out at all, and for him they always flower just after Easter, even if Easter is late like it was this year. One of the plants had magenta flowers. The other had white flowers and it had leaf segments falling off so Richard donated those pieces to the plant swap table. The flower on these plants is symmetric and star shaped, unlike the Christmas

cacti, which are related but which have an asymmetric flower. Richard had also brought along an Epiphyllum hybrid called "Tatau". The flowers for the original species of Epiphyllum tend to be large and white in colour (they are pollinated by bats, and tend to open in the evening), but by hybridising with Heliocereus (Disocactus), and Hylocereus, other colours were introduced, and now you can get Epiphyllums in a wide variety of colours. Another species with large evening-opening flowers is Selenicereus – some of these can grow into quite large plants. The final plant Richard showed was Echeveria "aurifolia" or "goldii" – this was actually an unknown Echeveria spray-painted with gold paint by the Dutch nurseries that produce them. He had only bought it because it had been on sale for just 35p. Of course the new leaves will be devoid of the gold colour.

Richard mentioned that one of the books that is never borrowed from the library – probably because he never tends to put it out is the book *Cultivation table for succulents cacti included* by Frans Noltee. It's produced English and German, and contains lot of information on succulents and cacti and other things like the bulbs which some of us sneak into our greenhouses. Adrian also mentioned *Succulents: Propagation*, written by Attila Kapitany and Rudolf Schulz. This is held in our library and it's an excellent reference for all types of propagation. Paul mentioned the two authors are from Australia so do watch out for their definition of seasons, which might be different from the northern hemisphere.

Richard had produced some notes on cultivation that he had printed out for people to take away. So what do plants need?

Water is essential – he mentioned that the only creature that doesn't need water is the clothes moth. In a plant, water allows the flow of nutrients from the roots to the rest of the plant. Evaporation from the leaves along with capillary action allows this process to occur. In our case of animals, we have a pump called the heart.

Photosynthesis is another important process for plants. They take in CO₂ from the air and break it down to produce carbohydrates to build up the plant's structure, and a by-product is oxygen, which is fortunate for humans. Plants need light to facilitate this process. Most of the bulk and weight of a plant is made up in this way. The photons of light need to have to have enough energy to allow the conversion process so that means the light needs to be the right wavelength. It turns out that blue and red wavelengths are particularly important. It's because plants don't use green light that green is the

colour reflected back by most plants. Some succulent plants including desert plants use a different mechanism called CAM (crassulacean acid metabolism) where they grab the CO₂ at night and store it and then when they use the light for photosynthesis the next day, they can keep their stomata closed and avoid water loss.

At night plants need some energy and so they use a process called **respiration** - a chemical process in the cells which uses carbohydrates and breaks them down. In order to use that energy to grow, the plants need nutrients apart from carbon, hydrogen and oxygen - and the most important of these are nitrogen (N), phosphorus (P) and potassium (K) which are obtained from the soil. Most fertilisers we use provide N-P-K in certain ratios, along with trace elements. Richard ended by mentioning that there were various other things that plants need to grow properly - things like space, airflow, etc.

Before the mid-meeting break, we had a few words from Bruce on seed raising. He sows seeds in a pot which is then sealed in a polythene bag, and he does this around February each year. The bag acts as a mini greenhouse and it also seals in the moisture so the bags don't need to be watered until after the seeds start to germinate. Some of his seeds had come up too well and the pots were rather crowded - and with others there was no germination at all.

During the mid-meeting break, our President, Peter Down cut the 65th Anniversary cake which had been provided by Jane Williams. The branch was formed in 1954, with Peter being one of the founder members!

After the meeting restarted, Adrian mentioned that Tesco's low dust cat litter - which people used a growing medium - has been withdrawn from sale and is no longer available. However, Adrian mentioned he had been able to find a substitute. Euro Car Parts sell "*all purpose absorbent granules*" for mopping up oil spills and it turns out that these are the same granules as the ones in the Tesco cat litter. A 20 litre bag costs just over £8 and some companies who are selling it online even offer free delivery, which makes it a very good deal. Robin said he had switched to using the Tesco granules and found some plants liked it and others didn't and he was going to try incorporating some compost, as per Stirling Baker's advice at the April meeting. Paul Klaassen mentioned that none of these granules have nutrition in them, so feeding is a must with them. Seramis is another material that can be used - it is expensive in the UK, but Paul mentioned he can buy it for a lower price when in Germany and it is popular there.

Next was a section on hardy plants. Ivor mentioned he has a cold (unheated) greenhouse and he has some plants growing there, in the winter, but in the summer months - June onwards to November - he brings the plants out and places them in the garden, and then back into the greenhouse for the winter. Ivor is interested in *Sempervivums* and has a collection of around 150 types. *Jovibarba* is a related species which has tuberous roots and which produces less offsets than *Sempervivums*. We saw a small headed *S. arachnoidea* and also a larger headed form. Ivor mentioned when you put plants outside in the garden, the elements and the UV from the sunlight will cause any writing on the labels to fade. He now uses black labels and uses an engraver to make the name permanent. Ivor also showed a couple of plants he had brought along - a shrubby mesemb called *Mestoklema tuberosa* - and a *Sarcocaulon* which forms a nice little tree and you can take cuttings from this to start off new plants.

A number of plants had been brought in for identification and these had been dealt with during the break - where possible, names had been provided.

Next we discussed the plants that had been handed out by the branch from 2011 onwards and which people had been asked to bring in. Adrian thanked everyone who had brought in their plants. In the absence of David he asked other "experts" to comment on some of the plants. It was at this point that he put on a pair of glasses he picked up from the table and then realised he couldn't see anything - "These don't seem to be mine". It was after a couple of minutes that someone happened to notice that Adrian's glasses were actually in his breast pocket, and the pair he had picked up had been left on the table by Ivor!

Echeveria lilacina was one of the first plants given out by the branch in 2011. Bruce's was the original plant - there were old dried up leaves at the base which were best removed since they could become a home for mealy bug. Bruce said he had re-rooted it in the past to shorten the length of the stem. It also had some offsets growing, so these could be removed when the plant was repotted. The colouring of the lilacina varies depending on the amount of sunlight it receives. Mike Shaw's plants and Tom Radford's plant were kept in more shade. Another *Echeveria* (*E. cuspidata v. zaragozae*) had been handed out in 2017 and Ivor mentioned he had killed his within a year. Bruce's had 3-4 heads on it and Tom's was more open and the leaves were longer. Feeding can also make a difference to the appearance of the plants, and Tom said he uses Miracle-gro feed to get larger flowers on his plants.

Euphorbia obesa had been handed out in 2016 and we had 3 nice examples on the table. Tom's was larger in size. The appearance of the three varied – one was a pure green colour and the other two had a stripey pale green/dark green effect. They were all looking healthy and were perfectly round. After a few years, as they mature, they do become more cylindrical.

The plant handed out last year was *Gymnocalycium stenopleurum* and there were a couple of examples of this. Mike Shaw also mentioned *Rebutia* cv "Sunrise" which had been handed out in 2016. This is a nice hybrid and there were half a dozen buds on it. Sometimes the hybrids tend to be easier to grow than the parents, but that isn't always the case. When breeders do create new plants one has to hope that they keep and propagate the best ones and discard the others.

There was a brief discussion about composts. A mix of 50% John Innes 2, 25% grit and 25% cat litter granules was mentioned. You want good drainage and you should repot every few years. For Aloes, 50% JI and 50% grit may be a better mix. Richard mentioned that drainage is important and unless you incorporate 40% or more of grit, it won't make a difference. The grit creates air spaces which allow the roots to breathe. It's the lack of drainage that kills the roots (and eventually, the plant). The particle size can be important and Cornish grit is favoured by some growers. There was a question about John Innes compost and when you sieve it, you can see a lot of coarse rubbish. is popular. question about JI compost. Unfortunately, there is no set formulation for John Innes and the quality of it varies from batch to batch and from manufacturer to manufacturer. If you find a type that works well, you just have to stock up on it – there's no guarantee that future batches will be as good. Unfortunately composts can't be stored for long periods, especially if the bags have been opened. Growers have also had problems with bad batches of compost which have actually harmed their plants. Clover is supposed to be a good brand of compost, if you can find it.

The final session was about LED lighting. I had my conservatory re-built last year and the builder suggested I have a new type of polycarbonate roof fitted called "Heatguard" which would ensure higher temperatures in the winter and lower temperatures in the summer. That sounded perfect and I agreed to it, without doing any more research. It was only after the conservatory was completed that I noticed the light levels in my kitchen were much lower than before, and this must be due to less light entering the conservatory.

I was initially quite disappointed and thought I would need to fit supplementary lighting (or have the roof replaced), and decided the former would be easier. So I purchased several different types of lighting to see which ones might work best. In reality, my haworthias (the plants I grow the most) actually seem to be doing quite well in the conservatory so my concerns about needing extra lighting might be unfounded, if I simply position plants which need more light (i.e. all the cacti and some of the agaves) nearer to the windows.

The first light I showed was a 4 foot tubelight with standard T8 connections and fitted out with a large number (over 500) surface mount LEDs, in a mixture of red (60%), blue (26%), white (7%) and warm white (7%). The tube lights can be purchased on Ebay or direct from China for around £10-£15 and a slim line tube holder costs a further £3. The LED tube light can also be fitted to an existing (conventional) tube light fitting - but you would need to remove the starter and also short out the ballast. The power rating of these tube lights is claimed to be between 20W and 60W but I think any figure over 30W is likely to be exaggerated. When fitting this sort of light you need to decide how far above the plants you will position the light, because this also affects the amount of area covered.

Next was a more robust unit with 2 very high power white LEDs, with each LED rated at 100W actual power. This lamp had an intensity control so you could adjust the light output. At maximum output, each LED would equal 6 100W filament bulbs, so in total the light output was equivalent to a dozen 100W filament bulbs. There were 2 fans on the back of a heavy heatsink to keep the whole assembly cool. These LEDs are chip on board (COB) LEDs and this is a relatively new and low cost technology where an array of LEDs is coated in a phosphor which converts the natural UV/blue light into white light. Cree is one of the best brands for high efficiency, but my unit was fitted with Citizen LEDs. This unit cost £140.

At this point I did mention that you need to take measurements of the light levels using a light meter or a mobile phone app - the human eye is very good at adjusting to different light levels and it can't really be used to compare different light types and intensities reliably. Adrian had also brought in his light meter that he had demo'ed last year and this also works well for checking light levels.

Next was a lower cost assembly which consisted of a metal frame with a chip on board LED mounted in the centre. This one emitted a combination of blue and red light, to give pink light. Due to the lower

power dissipation of this unit (50W) and also the COB LED being able to accept 240v directly, and the cost was much lower, at £20. It was also designated IP67 waterproof so could take a certain amount of water being splashed onto it. The overall simplicity of the unit makes it lightweight. Another unit of the same style contained 3 COB LEDs and this was rated for 150W. This unit cost around £45.

John Merifield mentioned that some of these LED lights generate electrical noise due to the switch mode power supply they incorporate. This is true for some types - you will hear interference if you operate a radio near the unit due to the AC to DC convertor. Paul mentioned that in Europe some greenhouses are being asked to turn off their lighting at night to reduce light pollution. And Tom Radford mentioned that salads are now being grown using LED lights.

The final unit I showed was a “2000W” unit which had an actual power draw of 600W. This consisted of an array of high power LEDs in a rectangular array, with 4 fans on the back to dissipate the heat. A label on the side did warn that the unit was not waterproof. I gave the audience a quick demo of the unit but turned off the light after a few seconds since it was indeed very bright. I was advised not to shine it into the sky, otherwise I might find planes requesting permission to land!

As costs have come down, more and more growers are turning to LED lighting. The fact that the emission can be tuned to what spectrum the plants need makes them more suitable and efficient than other forms of lighting. Interestingly, one of the key drivers is the legalisation of cannabis growing in the USA and Canada – it seems they are major customers for LED lights!

Vinay Shah

Next Month's Meeting

Our next meeting will be held on July 2nd and will feature a talk by Derek Tribble on "Crassulas Everywhere". Derek is a renowned expert on many of the succulent genera from South Africa and he has spoken to our branch on a number of occasions in the past.

The July Table Show will consist of **Gymnocalycium Group** (cacti) and **Agave Group** (succulents), along with "plant in flower". Please note that members can submit more than one entry in any of the classes, and that points will be earned for each placed entry.

The table show classes use the classifications from the *Guide to Shows 10th Edition* (contact me if you don't have a copy of this).

The *Gymnocalycium* group includes *Brachycalycium*, *Gymnocalycium* and *Neowerdermannia*.

The *Agave* Group includes *Agave*, *Beaucarnea*, *Calibanus*, *Dasyliion*, *Dracaena*, *Furcraea*, *Hesperaloe*, *Hesperoyucca*, *Manfreda*, *Nolina*, and *Yucca*.

For branch committee members, a reminder that a committee meeting will be held at the usual venue on 11th June.

Forthcoming Events

Sat 8 th Jun	Isle of Wight	To be confirmed - Rodney Sims
Tue 11 th Jun	Southampton	Branch Committee Meeting
Sat 15 th Jun	Portsmouth	Seed Raising - Ian Woolnough
Sat 29 th Jun	Southampton	visit to South West Cactus Mart, Portishead Youth Centre, Bristol BS20 7DD
Tue 2 nd Jul	Southampton	Crassulas Everywhere - Derek Tribble
Sat 13 th Jul	Isle of Wight	Mexico, Winter 2017 - Cliff Thompson
Sat 20 th Jul	Portsmouth	Cacti in Northwest Argentina - Hazel Taylor
Sat 20 th Jul	Southampton	visit to Oxford Branch Show, Old Mill Hall, Grove, Wantage OX12 7LBW
Sun 28 th Jul	Southampton	Garden Party - hosted by Alice Jankovec, West Moors, Dorset
Tue 30 th Jul -	Southampton	Display / Plant Sales @ New Forest Show, Brockenhurst
Thu 1 st Aug		
Tue 6 th Aug	Southampton	Plant Focus Evening – Aloe and Gymnocalycium
Sat 10 th Aug	Isle of Wight	Open Evening @ Peter Collard (Members only)
Sun 11 th Aug	Portsmouth	Summer Social @ Maggie Maddock, 37 The Thicket, Widley, PO7 5JL
Sat 17 th Aug	Portsmouth	no meeting
Tue 3 rd Sep	Southampton	Gardening with Succulents - Paul Spracklin

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