

British Cactus & Succulent Society

Southampton & District Branch Newsletter

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Editorial

Summertime ended just over a week ago and so it now gets dark in the evenings soon after 5 o'clock. Temperature-wise I don't think we've had any really cold spells as yet, I've still seen a few dahlias in flower and they are usually one of the first plants to let you know if temperatures have dropped below freezing. If the current temperatures persist for a few more days I will probably give my plants one last watering but I have already reduced watering from October onwards.

Announcements

The **Annual Branch Dinner** will be held this coming Friday (8th November), at the Luzborough, which is situated between North Baddesley and Romsey. A map is available on the front table, please contact Robin Caddy if you would like to attend this event.

Nomination forms for the branch committee for **2020** are on the front table – if you like to join the branch committee, please discuss with David or any of the existing committee.

The first meeting in January 2020 will be held on January 7th and it will be a **members evening** – if you have some slides or plants that you want to talk about for a few minutes, please let David Neville know.

Next month is our **AGM followed by a Christmas social** – as usual, the branch will supply the drinks, but we would appreciate people bringing along a variety of food to share with everyone. Glenn will have sheets where you can write down what food you can bring. There will be no bran tub this year.

For branch committee members, I will want to publish your annual reports in next month's newsletter – so please send me your write ups by the end of November.

David has obtained a supply of **BCSS calenders** for 2020. These are available at a price of £6 which is a couple of pounds cheaper than the mail order price.

Last Month's Meeting

Ex-situ Conservation of Cactaceae in the UK

Our chairman Adrian introduced Vicky Davies. She is co-owner of C&V Cacti, which is based in Littlehampton, West Sussex. She grows many cacti from seed, and she had contributed articles to BCSS's nNews, describing how to plant seeds and then care for the plants once they germinate. She is a qualified judge and her talk today was going to be based on a dissertation she had prepared for her Masters degree from the Royal Horticultural Society.

There are a number of requirements to enrol in the RHS Masters course – you have to be working in the horticultural industry and you usually maintain a full time job while studying during the 3 year course. There are 8 modules to cover, including topics such as horticultural research, operational management, and sustainable horticulture. A dissertation with a 10,000 word limit is due in the 3rd year.

The company which she works for (Nyetimber Vineyards) sponsored her through the course. Nyetimber is based near Crowborough, Sussex and it is the largest and oldest producer of sparkling wines in the UK. She is the head gardener there and maintains the grounds and gardens, which include a 16th century manor house and cottages. We saw some views of the gardens and buildings.

Nyetimer is her day job – but her real passion is growing cacti. She studied at Kew in 2003, where she did a diploma. She spent time in the dry tropics section and looked after some cacti. This is where she met Chris (her partner) – he was a team leader at

Kew. They didn't like living in London and moved to Sussex. Seven years ago, they bought a property with a decent size garden and we saw a view of her greenhouse. She loves loving growing plants from seed and she was glad that Adrian had mentioned the articles she has written for eNews.

For the dissertation, there were certain criteria that had to be followed. The topic had to be current and related to the horticultural industry. She wondered how to get cacti into the subject, and an article she read gave her some ideas. More people are growing cacti these days - are we putting pressure on the populations in the wild? All cacti are native to the Americas, apart from a few *Rhipsalis*. The article she saw was a 2015 paper published by International Union for Conservation of Nature (IUCN), which suggested that 31% of cacti species were threatened by extinction in the wild. ("*High proportion of cactus species threatened with extinction*" by Goettsch et al.)

Graham Evans mentioned that there are around 2000 recognised species of cacti, so the 31% figure means that something like 610 species threatened by extinction in the wild. In the news, we hear quite a bit about endangered animals but much less about plants, other than occasional articles about topics such as succulents from Madagascar. Vicky mentioned that a friend of hers from California had told her about *Dudleyas* being ripped out by their thousands, by people hiring helicopters to get access to islands in Baja. (*Dudleyas* and *Echeverias* are very popular in the far east.) The IUCN article listed a number of reasons which were putting pressure on the habitats and populations of cacti:

- conversion of land to farming for agriculture and livestock (e.g. vineyards cropping up in places like Chile)
- population growth - land is being used for new housing. And once a town develops, additional shops and warehouse and roads tend to get built
- unscrupulous collection of live plants

Vicky mentioned that often, local people don't understand importance of plants in the ecosystem – this means they are viewed as expendable. Next was an image which had appeared in the BCSS eNews - Roger Ferryman had written an article on conservation and illegal collection of plants. The picture showed a large number of cristate *Ariocarpus* and *Aztekium valdezii* which had been confiscated in Mexico. The shipment was heading for China. Graham Evans said that the bad news is that despite the confiscation, the habitat strippers must have got more plants to replace their planned shipment - some of those cristate *Ariocarpus* plants would command very high (4 figure) prices on sites

like Ebay. Vicky showed a screen capture of some Ebay listings of *Aztekium valdezii* – the seller was based in Ukraine. Of the three plants, the first one might have been seed grown, but the second one looked like an ex-habitat plant.

The first thing she had to do was to pick a topic for her dissertation – and she decided it would be "Can ex-situ conservation help *Mammillaria*?". She decided to pick *Mammillaria* because it's a fairly popular genus. The genus consists of over 200 species and this would be too many to work with, so she decided to pick a subset of the genus, to allow her to focus on a smaller group of plants.

The questions she would focus on were:

- what methods were currently used in the UK to grow these plants
- what species are popular with collectors
- come up with recommendations on how to reduce the threat to habitat populations

Vicky asked if everyone knew what ex-situ conservation meant? It's basically conservation of the plant, by growing it away from its natural habitat. This includes plants in collections at botanic gardens like Kew, Wisley, Cambridge, Eden Project, and also private collections and national plant collections. Places as seed banks are also important - Wakehurst's Millennium Seed Bank. tries to preserve the seeds for as long as possible, using low temperatures and controlled humidity.

Places which promote the growing of *Mammillarias* include plant nurseries and specialist plant societies such as the BCSS and the *Mammillaria* society. The genus *Mammillaria* is one of her favourites - her first plant was a *Mammillaria zeilmanniana*. There are over 200 recognised species and subspecies, and the plants are mainly endemic to Mexico, with some species found in the USA and also extending into central America. She asked the audience "how many people grow *Mammillarias*?" Around two thirds of the audience put their hands up. For the purpose of the dissertation, she used the classification devised by Adrian Lüthy, which splits the genus into 4 subgenera, 7 sections and 22 series. The whole genus would have been too much to work with, so she focussed on 3 series which contained a total 14 species and subspecies, many of which are considered choice plants. She put up a listing of the species and David commented "Yes, we've all killed some of those!"

The series she covered were series *Herrerae* (*M. albiflora*, *M. herrerae*, *M. humboldtii*, *M. sanchez-mejoradae*), series *Longiflorae* (*M. longiflora*, *M. tepexicensis*, *M. napina*, *M. hernandezii*, *M.*

deherdtiana, *M. saboae*, *M. saboae* ssp. *haudeana*, *M. saboae* ssp. *goldii*, *M. theresae*) and series Pectiniferae (*M. pectinifera*, *M. solisioides*).

Vicky showed a sample IUCN page. These are set up for various species and the species is given a conservation status rating. These ratings are determined by looking at the number of plants in the population, looking at whether that population is increasing (if there are signs of young plants germinating and growing) and then considering the threats to the species. These threats are mostly from collection of plants and seeds from wild populations, and agriculture or land development.

Based on the latest IUCN data, of the 5 genera now contained in *Herrerae*, *M. albiflora* was critically endangered, *M. herrerae* was critically endangered, *M. humboldtii* was critically endangered, *M. luethyi* was vulnerable and *M. sanchez-mejoradae* was critically endangered. Within the Pectiniferae, *M. pectinifera* was endangered and *M. solisiodes* was not evaluated. For the Longiflorae, 2 species were in danger, with *M. hernandezii* considered endangered and *M. theresae* critically endangered.

Graham Evans mentioned that the size of some of the habitats where these plants grow can be very small – for *Mammillaria albiflora*, the type locality is just 10s of metres. And for *M. sanchez-mejoradae*, an estimate is that the population has reduced by 75% in the 30 years since it was first discovered. Of course, different species can be endangered for very different reasons.

Mexico has its own set of rules regarding plant collection and export which are amongst the strictest in the world. You can't export any cacti plants or seeds. If you buy a plant on Ebay - you really can't be sure of its origins. Finding the balance between conservation and production of plants where they are desired is difficult. When a new plant is described, people are generally not willing to wait until there are plants in cultivation, so there ends up being quite a lot of collection in the early days to satisfy demand. David Neville mentioned that whenever a new plant is described, there's usually huge demand from a certain percentage of growers who want to get their hands on the plant, and many of them don't care how the plant was obtained.

She looked at methods of propagating Mammillarias and this involved growing from seed, growing offsets, and also nurseries producing their own seed. She asked "What have people found with the seed?" "Do the seeds germinate?" "Has anyone tried growing *M. goldii* or *M. theresae* from seed?" Generally, for this group of plants, it's difficult to

get seed, and germination is also difficult. Most cacti have seed pods which are easy to access and held proud of the body, but this group tends to retain the seeds within the plant body, and usually the plants don't release the seed until the plant dies. So a plant body can contain several generations of seed. If you are cultivating one of these plants, just how do you get at the seed without damaging the plant?

She visited Kew Gardens to see what they were doing for the group of plants she was assessing. She had been there in 2003-2006 doing a diploma so she had some pictures dating back from that time. She wanted to know how many of the 14 species were being grown at Kew, and what they were doing to propagate them or exchange with other collections.

She visited Kew in April 2018. Their database claimed to have 3 of the 14 plants but she was unable to actually locate any of these examples. There also seemed to be minimal propagation going on. She met with the current supervisor who wasn't sure of the discrepancy with their plant records. Perhaps the plants had gone to cactus heaven and the database had not been updated. This just illustrates how important good record keeping is.

Kew have 3 climatic zones for cacti. Their plant collections have had a difficult time due to financial difficulties as Kew lost government funding and there had been a salary freeze and redundancies amongst the staff. The people looking after the plants may not have good knowledge of cacti. Difficulties with pests such as scale insect was a problem. The use of multiple growing mixtures also made it difficult to water the plants properly - these plants are difficult to grow even if you know what you are doing! We saw a group view of their Mammillarias and this suggested their collection wasn't very diverse. No additional effort seems to be made to propagate and look after the rare plants, so it just depends on who is employed at the gardens to look after the plants and whether they have a special interest in the plants. David Hunt and Nigel Taylor were there in the past, and they would have made an extra effort but it's hard to maintain that over a long period.

One member of the audience was a student at Kew between 1970 to 1973 and he said it was very different back then, compared to how Kew is set up now. Vicky said things had changed a lot in the 15 years since she was there. We saw some more general shots. We saw lots of *Echinocactus grusonii* in one picture. Why was this plant being grown there in large numbers? Well, *E. grusonii* is widely grown in collections, but it is almost extinct in nature. Paul Klaassen said a dam had been built

close to its locality. Vicky showed some pictures from 2003 when she had been there – to contrast with what was there in 2018. You could see the condition of the plants then and now, and you could also see that some pest damage had occurred to some of the plants. Vicky mentioned on one occasion the automatic screens had failed and then the vents also failed and this had led to a lot of plants being damaged by scorch. She showed an example of a habitat columnar cactus plant which had been moved into the Princess of Wales conservatory – you could easily see that the growth in habitat was more vigorous and the spines in habitat were nice and strong, but they were a lot thinner after the plant was moved into cultivation. This shows how plants can struggle in collections even if they are given what we think are good growing conditions.

There are other unexpected risks to plants in the gardens - sometimes plants just get stolen! Vicky mentioned how a tiny water lily (*Nymphaea thermarum*) and a Welwitschia was stolen from the displayed plants in the Princess of Wales conservatory. David wondered why a rare plant like the water lily was put in a place where it could be accessed. Sometimes new or rare plants are used to attract more visitors. Tom Radford mentioned that Welwitschias are not the easiest plants to grow, they even struggle when grown in collections in South Africa.

After the break there was a quick auction of some plants from Geoff Card's collection. The talk resumed with a visit made by Vicky to a National Collection of Mammillarias held by Chris Davies who now lives in Oxfordshire, having recently moved there. He has a nice new greenhouse. The National Collections are organised by Plant Heritage, and there are 3 different types of collections: Historic, Horticultural and Reference.

Chris's greenhouse was around 14' x 22' in size and he aimed to have 2-3 examples of each of the 200 species and subspecies. This adds up to 600 plants. Fortunately some of them are small growing. Chris had examples of all 14 represented in his collection. Pictures of his plants and the labels showed that he had noted location information on the plants where possible. Chris is the Mammillaria Society's chairman and he buys seeds for their seed distribution, and he does seek out collection habitat information wherever possible.

Vicky visited the collection in mid-March 2018. Mammillarias are one of the first cacti to flower each year. We saw several pictures of the collection and Vicky mentioned it was a good collection to

visit. Chris was also propagating some plants from seed.

Vicky mentioned that she didn't look at the newly discovered *M. bertholdii* which is part of the Longiflorae - it's a new and popular discovery but it's difficult to ask anyone questions about it since it shouldn't even be available in this country or in Europe due to CITES and Mexico's strict rules regarding the export of plants. Paul Klaassen mentioned he has seen the plant in habitat – and although it's very rare, there have been locations other than the original site which have since been found. There are growers at ELK and in the Czech Republic who have been propagating the plant on grafts and it can produce a lot of seed. There is value in making the plant available to expert growers who can propagate it and reduce pressure on the need to get more plants from habitat illegally. There are probably growers and sellers in Mexico who could also propagate these plants but Mexico hasn't explored that option at present. Graham Evans said *M. bertholdii* can be grown by grafting the tubercles so you can produce a lot of plants quickly.

Vicky covered some other aspects of her dissertation where she had summarised the work of the BCSS and the Mammillaria Society. The BCSS publishes 4 journals a year and have an annual seed distribution, and some of the 14 species do show up on the seed list occasionally, but not very often. The BCSS also does some research and has a conservation fund which aims to support conservation projects around the world. The Mammillaria Society also produces journals and has a seed distribution which has included seed of some of the 14 plants. With the seeds, the age of seeds and temperature may affect germination and this topic needs more study. David mentioned one Czech seller at ELK has had trayfuls of *M. goldii* seedlings for sale for the last 3 years, so there are people around who are quite good at it.

Vicky mentioned that she developed 2 questionnaires. The first was online and was designed for casual growers of the plants. The second was aimed at specialist growers and nurseries. 78 people responded to the first survey, which was referenced in one of the BCSS eNews. The survey was reasonably straightforward, and included questions like "Do you grow cacti", "Which of the 14 had you grown", "Did you propagate any plants", and "Which ones of the 14 would you be looking for". Overall 81%-96% of the questions were answered. A couple of the people did not grow any Mammillarias, but 97% did. And 74% had at least one of the 14 in their collections. *M.*

luethyi was one of the most popular but it was also found to be difficult to grow. Most people wanted to try and buy plants from UK nurseries.

In the nursery questionnaire, she handed out a dozen surveys and had 9 responses. She asked the nurseries “Which of the 14 have they sold in the last 3 years?” “Were they growing or propagating the plants themselves?” “Did their production try and match what the customers were seeking to buy?”. Two of the nurseries said they sold none of the 14 - they just imported common plants from Holland and sold those on. She also asked some questions on what limits production of the plants. All her research was done in the UK.

Vicky showed some drawings of what happens to the plant bodies as regards seeds. The flower is fertilised and produces seed – but the seed pod is retained within the body of the plant. As the plant matures and gets older, the seeds may eventually hit the ground but it is going to be quite old - so perhaps the seeds may need to be aged before they become viable.

To summarise her key findings, the plants were not that widespread. It was disappointing to see that Kew had none of the 14 plants. Propagation of this group of plants is difficult and question marks remain over the seed viability and quality. She had to make some recommendations for future study and research, and she suggested that the topics of improving seed production and germination would be good areas for people to study. Her talk ended with a picture of the March graduation event at the RHS halls.

Vinay Shah

Table Show Results

At the October meeting, there were 9 entries in the table show, and 7 entries for “Plant in flower”.

	Cacti – Echinocereus	Succulents – Lithops
Open	(1) B Beckerleg Echinocereus sp.	(1) B Beckerleg Lithops marmorata
	(2) -	(2) I Biddlecombe Lithops hallii
	(3) -	(3) M Stevenson Lithops aucampiae
Intermediate	(1) B Beckerleg Echinocereus rigidissimus	(1) B Beckerleg Lithops gracilidelineata
	(2) -	(2) I Biddlecombe Lithops bromfieldii
	(3) -	(3) I Biddlecombe Lithops optica rubra

Cacti/Succulent in Flower

(1) B Beckerleg Lithops dorotheae
(2) P Klaassen x Ferobergia sp
(3) S White Aichryson bethencourtianum

Ivor Biddlecombe

Next Month's Meeting

Our final meeting of the year will be held on December 3rd. This will be our Annual General Meeting followed by the Christmas Social.

After receiving reports from some of the branch officers, electing next year's committee, and handing out the Table Show trophies, it will be time to dig into some food and refreshments! Drinks will be provided by the branch, but please do bring along some items of food for the buffet table.

In order to give the Committee members a chance to participate in the festivities, there will be no plant sales, sundries sales, table show or library at the December meeting.

For members of the committee, a reminder that a Branch Committee meeting will be held on November 12th, at Chilworth Hall.

Forthcoming Events

Fri	8 th	Nov	Southampton	Branch Dinner @ The Luzborough, SO51 9AA
Sat	9 th	Nov	Isle of Wight	Topic to be confirmed
Tue	12 th	Nov	Southampton	Branch Committee Meeting @ Chilworth Hall
Sat	16 th	Nov	Portsmouth	Agaves and their Cultivation - Kathy & Keith Flanagan
Tue	3 rd	Dec	Southampton	Annual General Meeting, followed by Christmas Social
Sat	7 th	Dec	Isle of Wight	Annual General Meeting & Christmas Social
Sat	14 th	Dec	Portsmouth	Annual General Meeting followed by American Supper
Tue	7 th	Jan	Southampton	Members' Mini Talks

Branch website: <http://www.southampton.bcsc.org.uk>

Facebook : <https://www.facebook.com/southamptonbcsc>