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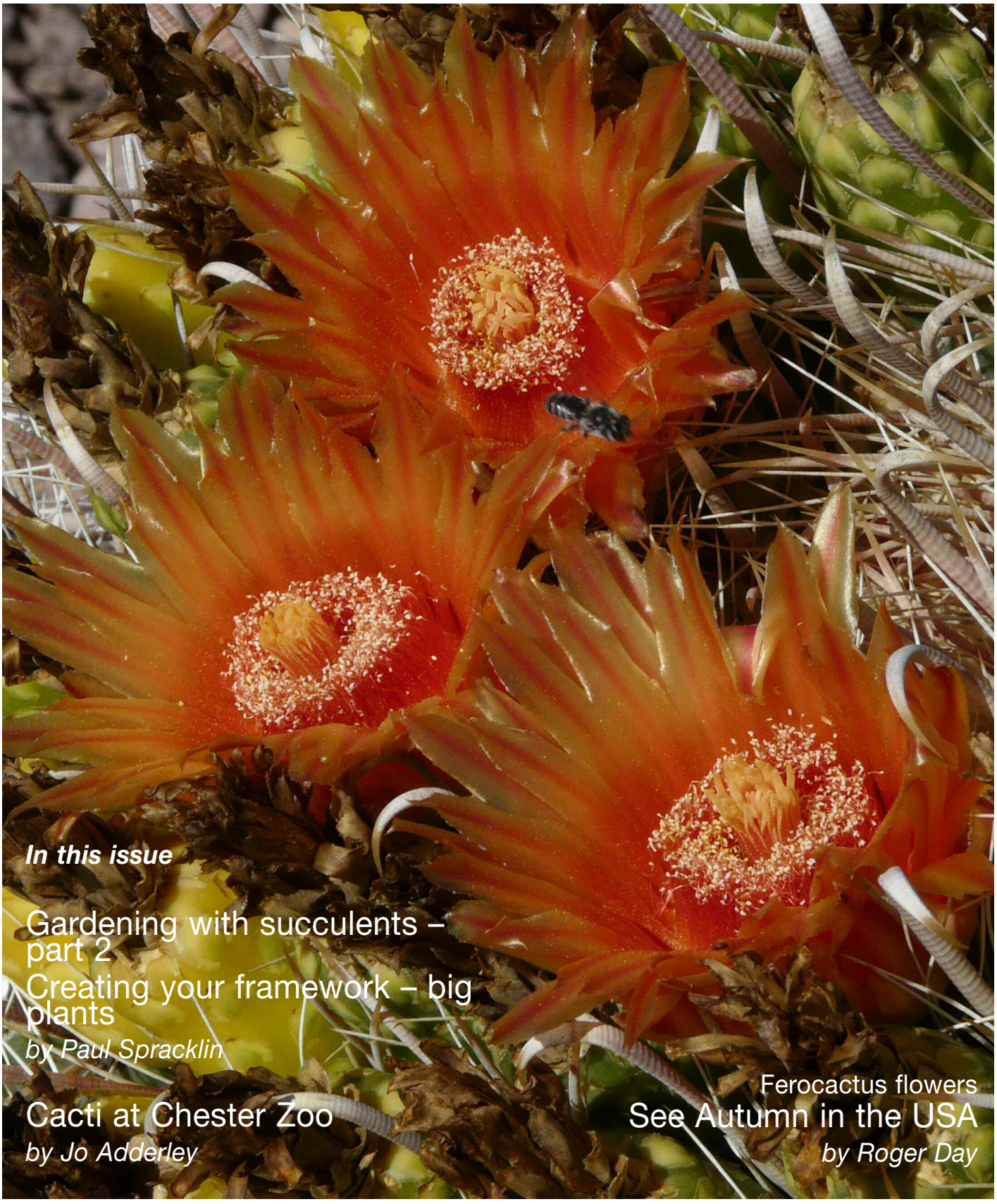

In this issue

Editorial

Welcome to the Essex Succulent Review.

Coming soon – a brand new website for the Essex Succulent Review.

I am currently setting this up, but there will be a small delay before this is ready so, for the present, back issues will still be available on the Zone 15 website as before.

But please note the new email address for the Essex Succulent Review. My blueyonder address will continue to work for the present, but may be phased out. I am a little concerned that this has been compromised, so if you did receive any spam emails purporting to come from me I can only apologise. I hope that this nuisance has now ceased.

If you do not already do so, and would like to receive the Essex Succulent Review as a pdf as soon as it is ready, please send me an email to the address below and I will add you to the notification list.

Please remember that this is completely free and you can unsubscribe at any time simply by telling me you wish to do so.

Sheila Cude

Essex
SucculentReview

The Essex Succulent Review is published quarterly in March, June, September and December.

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Past issues are archived at www.zone15.bcss.org.uk/esr.html

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Zone 15 Annual Show
18-19 July 2015

This year we held the Zone 15 Annual Show at RHS Hyde Hall located in Essex. We had some 1,100 visitors over the two days, who were treated to a magnificent display of plants.

Many of these were members of the general public and attendance was undoubtedly helped by the RHS's own promotion of the event.

There is a short write-up of the event in September's 'CactusWorld' and I believe a more detailed account will follow.

Best cactus in show
Eriosyce sandillon exhibited by Bob Wilson

Best succulent in show
A magnificent Pachypodium brevicaule also exhibited by Bob Wilson

Autumn in the USA

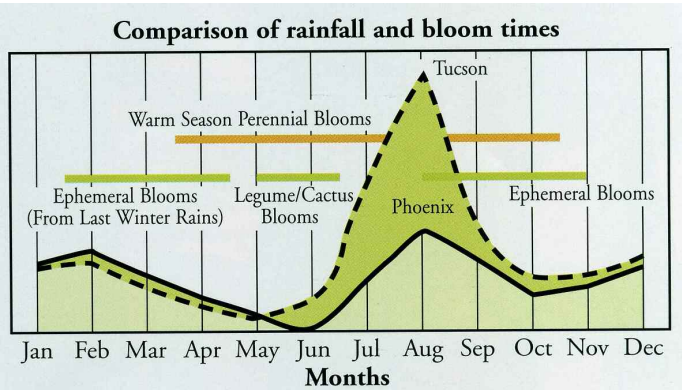
Arizona Desert Botanical Garden

by Roger Day

In 2014 my wife, Val, and I visited the American south-west during September and October, choosing this time as most people we know had been in the spring. We took a circular journey, of roughly 3,500 miles, covering Arizona and New Mexico starting at Phoenix.

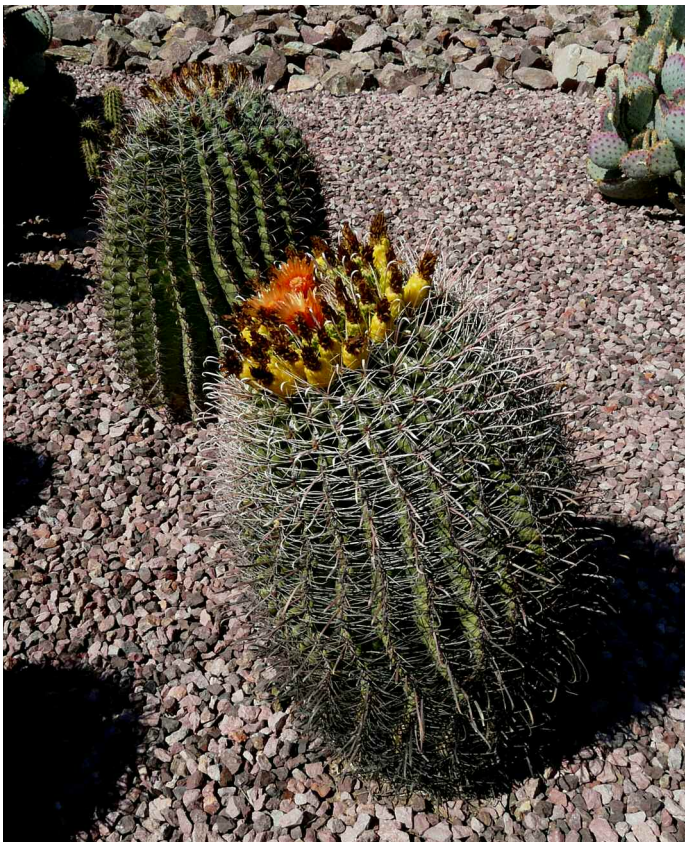
I do not like driving on tour so we found a small company from Oregon, Travel Dream West, which arranges tours to your requirements. We decided where we wanted to go and they provided everything else, vehicle, hotel booking etc. Details can be found on www.traveldreamwest.com and we can certainly recommend them.

This article covers the Arizona Desert Botanical Garden in Phoenix. We visited the garden three times, before the rain, during the rain and after the rain.



Our choice of tour was also based on a climate chart showing the peak rain fall was during these dates.

When we arrived in Phoenix, a few days before the start of our tour, the weather was sunny and warm, but the forecast warned of an approaching monsoon.



Some Ferocacti. See also the front cover.

Stenocactus thurberi

This part of the USA gets the remains of tropical cyclones which cross the Pacific and reach Arizona at this time of the year.

We wanted a good look at the Arizona Desert Botanical Garden to see their plants and compare them with the habitat ones we would see later. We were intending to go to the habitat location of Stenocactus and Carnegia.

The Garden is located on the edge of town near Papago Park. If you do not have your own transport, you need to get a bus or cab; public transport in Phoenix is good on week days only. The current entrance fee for the Garden is $22, but if you are a member of the American Horticultural Society you get in free; (not so if you are a member of the Cactus and Succulent Society of America).

The collection is laid out in desert scenes and groups of similar genera. The *Ferocactus* group had seed pods from the current year and a few flowers (see previous page and the front cover picture).

At this time there had not been heavy rain so the plants were looking dry, but not for much longer.

The next day the cyclone arrived, hitting Phoenix around lunch time. It produced torrential rain, power cuts and flooding. Torrential monsoon rain flooded the garden and it was covered with streams of water coming off the near by hills.

We had been due to visit the Garden as part of the tour but we were glad we had gone the previous day as it had to be closed. The bad weather had cut the power

The Garden in the rain with the Ferocactus bed

so they could not take payment or issue tickets. Still the plants were getting a good watering.

We left Phoenix heading for Ajo then on to the Organ Pipe Cactus National Monument. After two weeks we were back in Phoenix and, having a day spare, we went back to visit the Garden again.

On this occasion we were surprised to see that many plants had been shaded against the sun.

There was a notice saying that this was to prevent them getting sunburnt! The fact that they had been sitting in the sun for weeks without cover seemed strange to us. The only reason we could suggest was that the rain may have induced rapid growth.

If you are ever in Phoenix then I would recommend a visit to the Arizona Desert Botanical Garden. If you have other people in your party to amuse, who are not interested in cacti, then it might be useful to note that it is near the Zoo. ■

Photos: Roger and Val Day

Acadama

by David Offord

For many years I have grown haworthias, aloes etc in a traditional mixture of John Innes, sand and grit. This worked, sometimes. However, on frequent occasions, the plants lost their roots when the compost got too old and overloaded with undesirable salts. The same mixture and lost roots – result rot, when I mistakenly continued to water the poor things. Only sometimes, did the patient respond to repotting and other tlc.

When looking over Stirling Baker's beautiful collection, which features far fewer plants 'in recovery' and a high percentage of show-worthy specimens, I asked how he managed this. He was generous enough to tell me about the growing medium he uses. I was still doubtful, as I knew he had produced stunning entries in shows long before he adopted his current mixture. It was explained that before he was able to manage, but had then a higher proportion of root loss. Now the roots were thicker more numerous and fitter.

To demonstrate he depotted a plant that was due to be repotted and showed a root mass that would do credit to an Olympic athlete's arterial system. Instead of the tangle of old, dead and new growth that can be encountered when dealing with a healthy plant in a John Innes mix, there were lovely, clean, active white roots with very little dead material to be seen.

Needless to say I was sold and asked for further information. First there is no soil or humus of any kind involved and therefore no chance of the diseases/fungi that these can bring, or for which they may provide propitious residence. Instead there are several kinds of rough surface tiny 'rocks' each say 3mm in size and resembling crushed rock gravel.

The first and perhaps most important is the baked and aerated clay that is the acadama itself. This is capable of taking up water and the nutrients added to the water. As long as not too much of the dusty residue, that accompanies most bags of it, is included, the wide spaces between the random shapes of the grains mean that excess water will very quickly run out of the drainage holes.

Using a pure clay compost however risks compaction over a period of time as the granules break down under assault by water and root action. To avoid this, and to avoid making the mix heavy, a less permeable extra is required. This is a hard pumice which comes, of course, from the product of volcanos. If you have ever examined a pumice stone you will know that it is very light for its size. This is because it was relatively light ejecta to start with and, in its fall to earth, became, and remains, riddled with air pockets. This comes in similar sized pieces and will serve to keep the acadama granules apart and form a good surface to which the fine feeder roots can adhere. To lighten the mix further there is a softer kind of pumice that the roots may more easily penetrate.

Finally there is what I think (may well be wrong here) is a compacted volcanic ash which again I observe takes up and retains water and which is very light in weight.

The acadama is, as you would expect, of a light yellowish colour when dry and goes brown when wet. The other parts of the mix are grey or white or yellowish white.

The proportions in which to mix the above, or indeed whether to mix them all, must be a matter for the individual grower. However I have found that a mix of equal parts of the two pumice and ash and a double helping of acadama works well.

I have, over the last three years, changed many of my haworthias, small aloes, small agaves and tap-rooted cacti into the above mix. Even those plants that had lost their roots recovered quickly. Now, when I repot, I too have plants with far, far better roots and other advantages.

The pros. Yes, yes, better roots and healthy growth on top too! When repotting the mix falls away from the roots easily and (assuming the roots are all healthy and pest free) the leavings can be gathered and reused.

The cons. There is no feed in this compost and so you should water in your preferred product far more often during the growing season. I am experimenting with slow release granules in the mix at a rate of an ounce to two pounds of growing medium. Seems to work well, but watch the nutrient proportions and be aware of the need for adding trace elements from time to time.

This volcanic gift is not suitable for plants with fine matted roots eg *Lithops* and many other mesembs, crassulas etc.

Now the real problem. The material comes from Japan and is not yet shipped in real bulk quantities. It is ******! expensive. So are booze and fags! It is for you to decide which is more important.

See the internet for suppliers. There is one nursery in Essex that now stocks it adequately and was at the last BCSS national show. (I have also seen a stockist in Crews Hill, near Enfield – Ed.)

There are of course other suppliers of expanded clay granules, and pumice can be bought in larger chunks which you can crush yourself. However as these will not have the same composition as the material I have discussed I cannot say whether or not they will carry all the same benefits. ■

Cacti at Chester Zoo

by Jo Adderley, Chester Zoo horticulturist

Here at Chester Zoo we currently hold over 1,500 cacti and succulents including a large number of *Mammillaria*, *Gymnocalycium* and *Melocactus* along with a few other smaller groups such as *Uebelmannia*, *Thelocactus*, *Rebutia*, *Sulcorebutia*, *Parodia*, *Aztekium*, *Lithops*, *Echeveria*, *Aloe*, *Haworthia*, *Gasteria*, *Euphorbia*, *Crassula*, and many more – I could go on!

We also hold three national collections of *Copiapoa*, *Matucana* and *Turbinicarpus.*

The early gardens

So I guess the thing everyone wants to know is how did so many cacti and succulents find their way into a zoo?

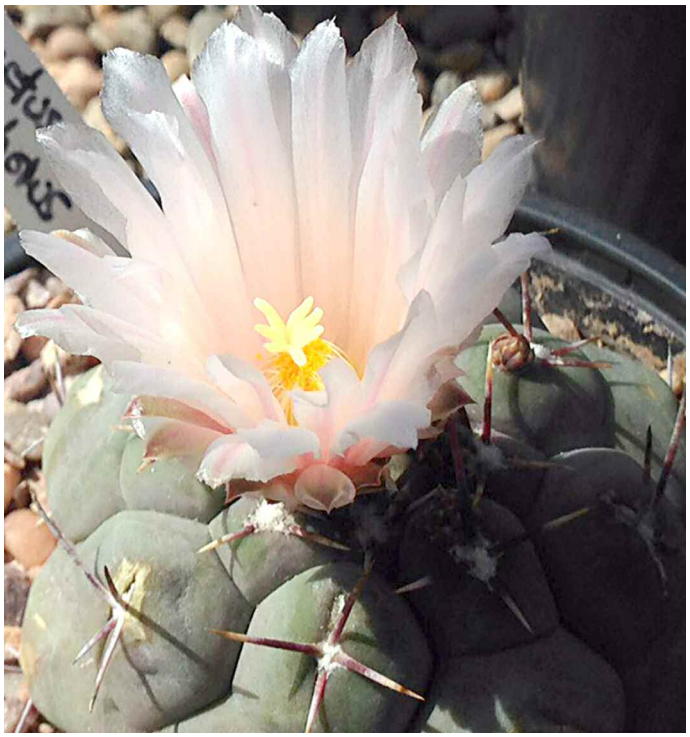
Let me give you a brief glimpse into gardening at the Zoo in the past. If you visited the Zoo over 15 years ago you may remember that, aside from the rare and exotic animals, we were also quite well-known for our amazing gardens. Back in the early days of Chester Zoo these were colourful bedding displays maintained by a large team of gardeners, backed up by a nursery that grew all of the bedding requirements from seed to plant. Over time the fashions changed and growing and planting using an annual bedding plant scheme became expensive and inefficient, so slowly the Zoo started to change these lovely, colourful, but labour intensive, displays into the more sustainable and permanent style of planting that we have today.

We continue to get much praise from our visitors for the attractive and interesting landscaped areas that we create within the Zoo and the surrounds of the animal

Turbinicarpus schmiedickeanus

Copiapoa tenuissima

enclosures. Our sunken garden, for example, brims with spring and early summer colour from the many Rhododendrons, *Helianthus* and spring bulbs. The glorious grasses garden, which is home to some interesting varieties of bamboo, also has an area showing how grasses have influenced our food chain.



Thelocactus hexaedrophorus

As a result of the change in gardening styles, the Zoo had some rather large greenhouses that were not being put to full use, so the Curator of Horticulture and Botany, along with the Nursery Manager, set about making a plan for their long term use. This is how five national collections became housed here at Chester Zoo.

The collection years

Chester Zoo has a mission to be a major force in conserving biodiversity worldwide. This led to an idea as to how the greenhouses could be kept fully functional and perform an active role in conservation; resulting in a plan to house a cactus collection. We were already holding a national collection of orchids, propagating rare plants from Mauritius and involved in local conservation plant work with the black poplar, Isle of Man cabbage and a rare form of juniper found in the North Wales countryside. We had also started collecting another rare genus, *Nepenthes*, which, like cacti, form a large group of plants that are amongst some of the most endangered in the world. They fitted in with the Zoo's aim to safeguard these special plants for future generations as all of these plants face very similar threats to those faced by many animals within the Zoo – habitat loss due to human conflict and over collection.

With the decision made, we went on to grow national collections of three genera, *Turbinicarpus*, *Matucana* and *Copiapoa*. The mission was set and Paul (the Nursery Manager) went about obtaining the seeds for these collections. Every resource was used, including getting help from our junior members, a year or so after sowing the seeds, to transplant thousands of little cacti into their very own pots.

Along the way Paul attended local cactus and succulent society meetings and began to make friends and contacts who shared the hobby passionately too. As the years ticked by, (sadly none of us are getting any younger!), the time came when some of the collections belonging to these friends and contacts needed to find new homes. Chester Zoo became that home. We received collections from Richard Harbour and Dr. Alan G. Scott as well as from the local botanical gardens at Ness, as they no longer had the capacity to maintain their greenhouses to such a large extent. Many of the plants from these collections can still be seen today at the Zoo which is the main reason we have so many large and unusual specimens here.

Mammillaria lenta

My time with the Zoo

I have worked with the horticultural team within the Zoo for two years now. My first year was spent as an intern learning about all aspects of horticulture within the Zoo, both inside the glasshouses and out on the grounds. I was fortunate enough, at the end of my internship, to be offered a position within the glasshouses looking after the cactus collection, the butterfly house and our new monsoon rainforest.

My work here is very diverse, ranging from looking after plants from desert-like environments to those that require daily watering and a very

humid environment. Despite not having had experience of working with cacti in the past, I do really love looking after the cactus collection and I am finding it challenging and fascinating.

My favourites, by far, are the *Turbinicarpus*. They are small and easily manageable and the fact that they rarely leave me with fingers full of spines puts them at the top of my list of favourites to work with! They can be a bit tricky and, as I try not to overwater them, some succumb to drying up. However I am sure with another few years' experience those that survive will continue to flourish.

A large Echinopsis showing off its beautiful flowers

Following closely behind are the *Echinopsis*. The flowers are just amazing and, although they are gone in a day, they are flowering almost monthly at the moment which makes me very happy.

I joined the British Cactus and Succulent Society in October 2014 and started attending meetings at the Manchester Branch from February 2015. In that time I have been fortunate to have had the opportunity to visit a few collections around the country. I thoroughly enjoy meeting people with the same interest and passion as myself. Even my partner and his mum have caught the cactus bug and come along to the meetings as well as trips with me. At home we have a small propagator with seeds growing in our spare bedroom and I am increasingly becoming concerned about the size of my windowsill collection! However we do have plans to erect a small greenhouse in our garden as soon as we can, so I expect our collection will continue to expand.

Since taking on my role at the Zoo, I decided to re-pot the collections in early spring and have only reached about a quarter of the way through due to the number of plants requiring attention. I am getting to grips with the watering regime and fear that I err on the side of under-watering rather than over-watering. As a result, I have lost a number of smaller *Turbinicarpus* and some younger plants, but I guess it will take some time for me to fully understand the watering needs as these plants require such a diverse range of individual conditions.

I have also dabbled with seed-raising, with considerable success and I am now transplanting some of my one-year-old seedlings into their own pots. The thought of winter is somewhat frightening now as

Some seedlings growing well

the end of summer is approaching fast and I have heard that it can be difficult to keep young plants going through their first winter.

I have had some problems with sciarid flies and an ongoing battle with mealy bugs. However, I am starting to find solutions to keep these little pests under control and find the online forums a great place to get ideas and answers.

I have also met some really interesting and knowledgeable people and will continue to pick their brains when I need to. Hopefully, one day I can also be classed as someone who can help when other newbies are unsure of what to do next.

Pachypodium succulentum

The future for the cactus collection

My hopes for the future of the cactus collection within the Zoo are to continue its expansion as I increase my knowledge and understanding of caring for cacti. I am aware that the Zoo's collection is in a very fortunate position, funded and supported by such a large organisation. We are also able to reach out and educate many others about the joy of cactus-growing, as well as the importance of conserving their habitats for future generations.

As my knowledge and contacts grow I would like to be actively involved with the conservation of cacti and raising awareness of the problems they face in the future. I realise that I have the privilege of receiving the support and encouragement I need to help me to do this. I am keen to gain the skills and expertise required to enable me to keep a healthy supply of true and gene-diverse seeds and plants in the collections. By learning and practising new skills myself, I will be able to share what I learn with generations to come.

Chester Zoo will always to be a source of pleasure and wonderment for cactus enthusiasts, growers and conservationists as we continue to investigate and introduce ways to link our cactus collections with conservation projects around the world. ■

Photos: David Jurkiewicz and Jo Adderley

Strophocactus chontalensis

by John Hayward

I bought this plant several years ago as a *Deamia*. It has since had name changes, one of which was *Nyctocereus* but it now nestles under *Strophocactus*.

It comes from Mexico and is epiphytic, and I grow mine in a hanging basket high in the roof of my greenhouse on the side that faces north. I was told several years ago that this was not the best place for it, but it grows and flowers so well I see no reason to move it. This year has been exceptional and a few nights ago I removed 52 dead flower remains, with more to come. I water regularly and feed with a high potash fertiliser.

Yucca aloifolia in my Essex garden

Gardening with succulents – part 2

Creating your framework – big plants

by Paul Spracklin

In the first article I looked at general guidelines when it comes to growing succulent plants outside. In this and future articles I start to look in more detail at the plants themselves and how they can be used within a garden context.

A basic consideration for any new garden is how to achieve balance between large, structural objects, small subjects and open spaces. The large objects create the framework of the garden around which the small objects and open areas are added to give the effect you desire. This framework can be achieved in many ways – hard landscaping features such as pergolas, summer houses, etc give instant presence, but large dramatic plants can also provide structure and impact. The rest of this article highlights some of the large plants that can be considered.

Yucca

Some Yuccas have been widely grown since Victorian times and need little elaboration – *Yucca gloriosa* and *Yucca gloriosa* var *tristis* (syn. *Yucca recurvifolia*) both slowly form clusters of short-trunked, sparsely-branched plants. *Yucca filamentosa* and *Yucca flaccida* grow into stemless clumps – along with their varyingly variegated cultivars. More recently 'exotic' *Yucca* species have become increasingly available, many of which are beautiful and architecturally dramatic plants. *Yucca* inflorescences are broadly similar – branched candelabra of nodding creamy white bells, sometimes tinged with red or maroon, varying in size and extension above the leaves. Nearly all are beautiful at their peak but generally die off messily.

Yucca aloifolia: Of the exotics, this species is perhaps the most familiar. Slim, flexible trunks can reach over 4m topped by a crown of dangerous spine-tipped rigid leaves. If you brush against this the stem flexes then comes back at you – the leaf tips take no prisoners! In drier regions this can take down to –15°C but needs good drainage.

Yucca rostrata: Forms single trunks (usually sold trimmed of old leaves), sparsely branching with age and sporting a dense crown of long, stiff, pale blue, narrow, flattened leaves edged with a narrow pale band. Trunked, bare-rooted specimens are sometimes offered for sale cheaply, but getting these to root again is uncertain – better to pay more for fully rooted plants or seed raised plants. Perfect drainage and full sun are preferable. Established plants can take down to –20°C or lower but it is fairly intolerant of wetter growing climates. *Yucca thompsoniana* is similar but smaller with greener leaves and a tendency to branch more.

Yucca linearifolia: Often seen incorrectly named as *Yucca linearis*. In my opinion this is the finest *Yucca* species we can grow in the UK; superficially similar to *Yucca rostrata* but with even narrower leaves that have a diamond cross section. *Yucca linearifolia* grows a dense globe-shaped crown of leaves and – if left untrimmed – a handsome 'petticoat' of dead leaves. It is sometimes offered in both blue and green foliage forms. This is hardy down to –20°C and is also capable of handling wetter climates with good drainage. Offsets may appear around the base of the plant in time.

Yucca linearifolia in my Essex garden

Yucca queretaroensis in Mexico City Botanical University Garden

Yucca faxoniana in a Norfolk garden

Yucca queretaroensis: Very similar to the 'green' *Yucca linearifolia* – a close cousin – but with an even denser spherical crown comprised of even narrower, square-sectioned leaves. Once a rarity, but now more readily available after a wave of seed-raised plants hit the market, this unfeasibly beautiful plant is not quite as hardy or accommodating as *Yucca linearifolia*.

Yucca carnerosana and ***Yucca faxoniana:*** Two very similar yuccas; both are massive plants with the thickest of trunks (to 40cm across!), an open head of thick, bayonet leaves edged with peeling, thread-like margins and an unforgiving terminal spine. They have immense presence in the garden, preferably planted out of harm's way. *Yucca faxoniana* is hardier, taking temperatures down to –20°C.

Yucca treculeana: This is another large-trunked and very hardy species, variable in leaf length. Good drainage is needed.

There are many other *Yucca* species worthy of planting as well as those mentioned here.

Dasylirion

Dasylirion are, like *yucca*, stem succulents with dense spherical crowns of long, linear leaves usually armed with hooked teeth on the margins and often tipped by a pronounced frayed tuft. Most species slowly grow trunks, some quite massive with age, and some can occasionally branch.

There are some 18-odd described species but, for most intents and purposes, there are blue ones, green ones and a green one without marginal teeth. Grow one of each and that is dasylirions pretty much covered, as the famous American plantsman, Dave Ferguson, once said. Do beware though, if you wish to delve into the genus more deeply the huge issue is getting accurately named material.

When old enough they flower quite spectacularly, producing a towering column of thousands of small insignificant flowers (plants are either male or female) after which point they may or may not branch or produce offsets, the main crown starting again from a dormant bud next to where the flowering stem emerged.

A sunny position in any good well-drained soil is all these require. The species discussed are usually hardy down to around –10°C or much lower if kept dry.

Dasylirion acrotriche: Possibly the best of the 'green ones with teeth', this one remains compact, forming a dome of foliage to around 1.2m in diameter. Frayed leaf tips are conspicuous and attractive. *Dasylirion miquihuanensis* is variable in size but essentially similar.

Dasylirion acrotriche on Southend seafront

Dasylirion berlandieri is the most accommodating blue leafed *Dasylirion* and I suspect the candidate for most plants labelled '*Dasylirion glaucophyllum*'. Some forms can be quite robust, reaching 1.5m in diameter. Some forms of *Dasylirion wheeleri* can be quite blue – these usually have a distinctive twist in the leaves.

Dasylirion quadrangulatum is a robust and tolerant species, almost universally incorrectly called by its

Dasylirion berlandieri in a Cornish garden

One without teeth: Dasylirion quadrangulatum in my Essex garden

former name of *Dasylirion longissimum* – a species that does exist, but is rare in cultivation. This has very narrow, square sectioned dull green leaves held stiffly to form a beautiful shimmering 2m wide globe atop a thick trunk that can reach 5m in a generation or two.

Nolina

Nolina are cousins of *Dasylirion* and share many features – they are also stem succulents with a dense crown of narrow leaves. Stems can be above ground or below, branching in time, with some species growing into small trees whilst others remain grass-like clumps. The leaves do not sport marginal teeth but very sharp, finely serrated margins. Flower spikes are similarly

Nolina nelsonii in my Essex garden

impressive with, again, separate sexes. Not many *Nolina* have been grown in the UK but those that have seem to thrive.

Nolina nelsonii: This species is like a huge silver starburst in the border, attractive at any age, and rivals any *Yucca* species for architectural form and impact. An open 2m diameter crown of stiffly held silver-blue leaves tops, in time, a 30cm thick trunk that in old plants can reach 5m in height. Small plants have demonstrated hardiness down to –12°C, and they will take lower temperatures if kept dry.

Nolina hibernica: First known as *Nolina 'La Siberica'*, this has now been formerly described: the specific name *'hibernica'* meaning 'wintery' – alluding to the cold and damp winters where it grows. This special plant has a unique beauty. It is a trunked plant, to

Nolina hibernica in habitat, north-east Mexico

maybe 4m high, sometimes sparsely branching, with a dense crown of relatively wide leaves that have a curled withered tip. With age the leaves droop and form a dried petticoat – the curl in the leaf tip causing a swirling effect that is totally enchanting (see previous page). Not many people know of this plant but it is one of my absolute favourites, showing hardiness down to –12°C or lower. Seems to adapt well to wetter growing climates.

Nolina longifolia flowering in my Essex garden

Nolina longifolia: Probably the best known *Nolina*, there are ancient specimens to be found in a number of botanical gardens. Often branching into a many-headed plant in time, this makes quite a statement, although it is probably the least hardy of the species mentioned with plants in my own garden either dying or suffering damage at –8°C. But where climate allows this is one of the faster species and a good, totally drought tolerant alternative to *Cordyline*.

Nolina lindheimeriana in a Norfolk garden

Nolina texana: A trunkless species, growing a branching underground stem and forming a grass-like clump of narrow green leaves with curled and withered tips that strongly resemble pampas grass. It does give the game away when flowering as the dense inflorescence is held within or just above the leaves. These are exceedingly hardy, down to –20°C or lower in well-drained soil and make superb large scale ground cover in a dry garden. There are several, essentially similar trunkless species including *Nolina greenei*, *Nolina microcarpa*, *Nolina lindheimeriana* and *Nolina erumpens*.

Agave

Most of the hardier agaves would qualify as small to medium sized plants but a handful can get large enough to include here.

Agave americana: This is the most recognisable and easily obtained large *Agave* that does not really need further description. Some clones of this are hardier than others, some are better looking than others and there are various variegated forms that are varyingly hardy.

Agave montana: My personal favourite – a chunky plant that can reach 1.5m in diameter. The solitary rosettes resemble a houseleek on steroids, being densely packed with wide, glossy deep-green leaves that have a white powdery patina, deeply impressed 'bud prints', colourful reddish-brown marginal teeth and a terminal spine. In the UK climate *Agave montana* seems relatively fast-growing, performing better here than in hotter regions of Europe and the USA. During dry periods it appreciates a little extra water and is one

Agave montana in a Cornish garden

Agave ovatifolia in a north Essex garden

Agave salmiana ssp crassispina in my Essex garden

of the few species that continues to grow throughout winter. It can survive to –15°C or lower, if dry.

Agave ovatifolia: This species is one of the most dramatically beautiful agaves that it is possible to grow outdoors, space allowing. A chunky, imposing plant, it has ghostly, silver rosettes that can eventually reach 2m across, although no plants in the UK have yet achieved those proportions. The leaves are remarkably broad, cupped, with the tips and outer edges of the upper part of the leaf often rolling backward like rose petals. The upper surface is sometimes slightly channelled, leading to the common name of whale-tongue agave. The leaf margins are varyingly armed with black teeth and there is a pronounced, black, terminal spine. Again, although not necessary, a little irrigation during dry weather is appreciated by the plant. It has survived down to –12°C, and could perhaps take lower temperatures.

Trichocereus tarijensis in my Essex garden

Agave salmiana: A widely grown and unusually variable species, some will only resist the lightest of frosts – the popular and beautiful *Agave salmiana* var. *ferox* being sadly one of these. Sometimes large, hardy clones are available, in which case allow plenty of space as these can reach 2.5m in diameter. The relatively compact and hardy *Agave salmiana* subsp. *crassispina* (syn. *Agave coarctata*) is a good variety growing into a chunky 1.5m rosette of thick, dark grey-green, incurving leaves, often banded with pale grey and sometimes slightly channelled. The marginal teeth are not very pronounced. The hardiest selections can, if dry, survive down to –10°C.

Cacti

One or two cacti are substantial enough to make it in the 'structural plant' category.

Trichocereus terscheckii: Not widely grown by any means but I have a 4m high plant that has been in the ground for over 10 years, growing happily at a rate of around 15cm a year and taking whatever the weather has thrown at it. This is quite possibly the most unusual plant to be seen in an English garden – a massive column of green, short golden spines and tea plate sized white flowers.

Other large columnar cacti are also worth growing such as *Trichocereus pasacana* and *Trichocereus tarijensis*. The latter species flowered for me for the first time after 15 years outside.

As I said in my introduction, not everyone is in a position to grow every plant here, but one or two can make a real impact in the garden or arid border.

In the next article I will deal with smaller plants – how to fill the gaps and paint the pictures.

Paul Spracklin is a garden designer with a specialist interest in gardening with succulents. For full details see his website Oasis Designs. ***Photos: Paul Spracklin***

Huernia pendula

by Sheila Cude

As its name implies *Huernia pendula* is a naturally pendant species. In habitat it is confined to a number of dry river valleys in the Eastern Cape province of South Africa, where it grows on sheer shale cliffs. The long smooth stems dangle from crevices and cracks and the local name, '*Imitya*' meaning bootlaces, seems very apt.

In cultivation it grows well, if rather untidily, preferring partial shade. Once it is established, it will flower throughout most of the summer. The flowers are very small, with an attractive velvety texture and a barely noticeable odour. They too hang their heads modestly, which can sometimes make them quite difficult to spot.

A garden centre gem

Parodia mairanana

by Sheila Cude

Walk into any garden centre (well any that sells cacti and succulents) and the chances are that you will see one of these for sale.

Parodia mairanana originates from Bolivia, (the district of Mairanana in the department of Santa Cruz) where it grows at an altitude of around 1,500m. It was described in 1957 by Cardenas but is now considered, by the New Cactus Lexicon, to be a synonym for *Parodia comaparana*. I think this is rather a shame, as *Parodia comaparana* has very small, insignificant flowers no more than about 5mm across.

The flowers of *Parodia mairanana*, while not large, are a brilliant orange with a silky sheen and really seem to glow. And there are plenty of them. I have two plants, (both obtained from garden centres), which have been flowering continuously this year since the end of April. I understand that there is also a form with red flowers, although I have never seen this.

The plant bodies are an attractive dark green with ribs which start out straight, and then slowly spiral. They can start to flower from as little as two or three years old, and also produce numerous offsets. They seem to be tolerant with regard to growing conditions, mine grow and flower well in partial shade.

My plants are still quite small; however with time *Parodia mairanana* will grow into an imposing specimen in cultivation, and I could not resist using the picture below to illustrate this.

I have bought quite a high proportion of my plants from garden centres. Obviously many of the plants they stock are the more commonly and easily grown species, but I do not think they should be overlooked for this reason. *Parodia mairanana* is certainly well worth growing and the same could be said for many other garden centre plants.

The magnificent Parodia mairanana exhibited by Keith Cooke at the Zone 15 Show in July. My personal favourite plant in the show.