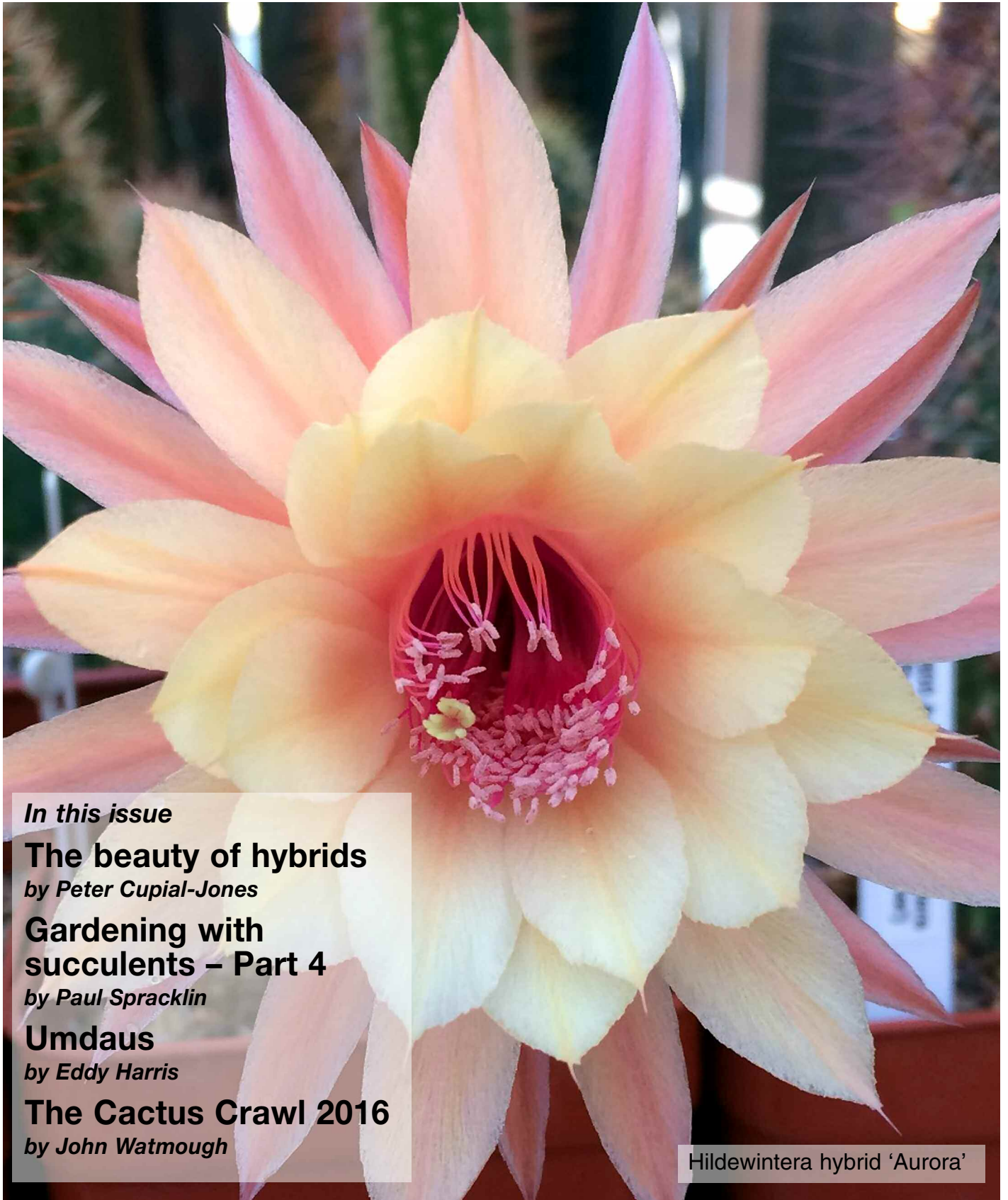


Essex **Succulent** Review

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June 2016



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Editorial

Welcome to the Essex Succulent Review.

At the moment I am planning ahead, not only for the next editions of the Essex Succulent Review for the remainder of this year, but also for next year. It is my ambition to have a stock of articles in hand, so if anyone would like to suggest an item for the ESR, please get in touch. As well as longer articles I am always in need of short items or fillers – a particularly interesting plant, or perhaps something which is doing well for you, for instance.

Just a reminder that the Essex Succulent Review has a website at www.essexsucculentreview.org.uk where all back issues are archived. In addition the current issue is still available on the Zone 15 website. The pdfs I send are downsized for emailing, but higher resolution files are available on these websites.

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 email me and I will add you to the notification list. 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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Zone 15 Annual Show

Saturday/Sunday 16/17 July 2016

11.00am – 4.00pm each day

RHS Garden Hyde Hall,
Creep hedge Lane, Rettendon, Chelmsford, Essex CM3 8ET

Judges: Barry Tibbetts and Ian Thwaites



Plant sales from

- **Plantlife** (Stuart and Jane Riley)
- **Toobees Exotics** (Bob and Beryl Potter)
- **Branch members**

For details of how to reach the venue see
[RHS Hyde Hall](#)



*Three magnificent
Melocacti exhibited at
the 2015 Zone 15
Annual Show*

Zone 15 Events 2016

Saturday 4 June 11.00am–4.00pm

Haverling Branch Annual Show

The Old Chapel, Upminster, RM14 2QR

Saturday 11 June 11.00am–4.00pm

Southend-on-Sea Branch Show:

United Reformed Church Hall, Kings Road, Leigh-on-Sea SS0 8PP

Saturday 9 July 10.30am–4.00pm

Waltham Forest Branch Show:

Chingford Horticultural Hall, Larkshall Road, Chingford E4 6PE

Plant sales from 9.00am

British Cactus and Succulent Society

National Show

Saturday 20 August 2016

9.00am – 6.00pm

Wood Green Animal Shelter

Godmanchester, near Huntington, Cambridgeshire, PE29 2NH

The BCSS National Show is the largest competitive cactus and succulent show in Europe. This year there are also 30 nurseries and private sellers booked, including Uhlig Kakteen from Germany, three sellers from Holland and two from the Czech Republic.

Full details on the BCSS website – [National Show](#)

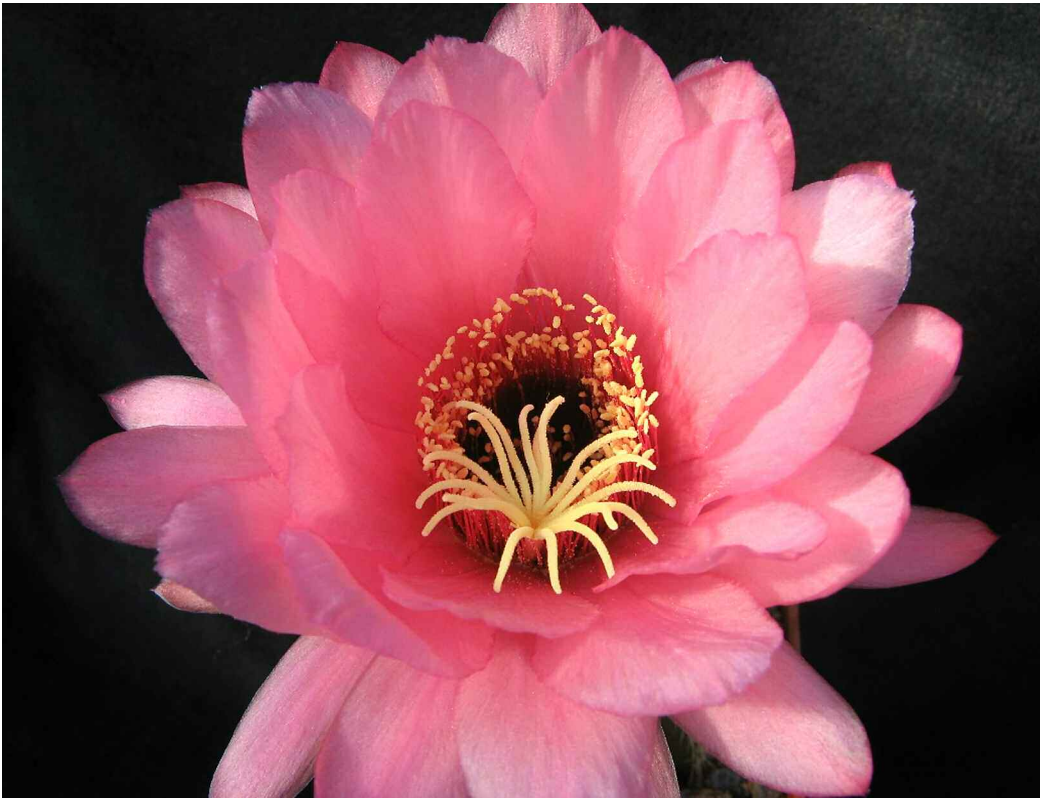


Fig. 1 TH 'Pisac'
See page 5

The beauty of hybrids

by Peter Cupial-Jones

Having started collecting cacti and a few other succulents nearly 30 years ago, like many others in the hobby my tastes have gradually changed with respect to the plants I grow. For the last 12–15 years the focus of my collection has moved almost exclusively to hybrids of *Echinopsis* and its relatives. I think I have always been appreciative of the flowers of the Cactaceae so the lure of the stunning flowers of the *Echinopsis* hybrids was irresistible!

Perhaps a brief note on taxonomy might be appropriate here. I have never been a taxonomic purist by nature so the rather relaxed approach taken to such matters by most of the hybrid fraternity sits comfortably with me. You will not find a frenzy of name changing here on the back of the latest insights from DNA studies or the lumping fraternity! Accordingly you will find that hybridists concern themselves with such old-fashioned (well-loved?) genera as *Echinopsis*, *Trichocereus*, *Lobivia*, *Chamaecereus* and *Hildewintera*.

Note

Hybridisers adopt the following shorthand:

EH	= <i>Echinopsis</i> hybrid
TH	= <i>Trichocereus</i> hybrid
CL	= <i>Chamaelobivia</i> hybrid
HWH	= <i>Hildewintera</i> hybrid

Next, a little bit of history. Among the earliest of the *Echinopsis* hybridisers were Harry Johnson (of Paramount fame) in California and Robert Gräser in Germany. A number of their original hybrids are still in circulation today. The mantle then moved on to people like Stauch in Germany (who produced the Rheingold series of hybrids) and, somewhat later, to Bob Schick of Northridge, California. His story is an interesting one. He spent literally years trying to 'improve' on Johnson's Paramount hybrids by successive crossing and re-crossing of plants in his backyard nursery. The result was the stunning range of Schick hybrids that the ISI distributed in the 1990s. At the same time a number of people in Germany such as Wessner, Kornely, Rippe, Liske and many others were starting to produce some equally impressive hybrids. This continues to the present day under the auspices of the *Echinopsis* Hybrid Working Group of the German Cactus and Succulent Society. In the UK Brian Fearn, of the Abbey Brook Nursery in Derbyshire, has developed a large number of hybrids over the last 40 years or so, as has, more latterly, Bryan Goodey of Southfield Nursery in Lincolnshire.

Production of hybrids of any kind is a numbers game, when it comes to sexual reproduction (anther applied to stigma and vice versa). You do the cross, with luck it sets a fruit and, by the end of the season, you may get 100 seeds. Then these are sown and the resultant seedlings grown on to flowering size (maybe 3–5 years

Bob Schick hybrids

Fig. 2 EH 'Cassandra' (right)
This has the additional bonus of repeat and multiple flowers, even when quite small.



Fig. 3 EH 'Icarus'
This is a somewhat larger-flowered plant

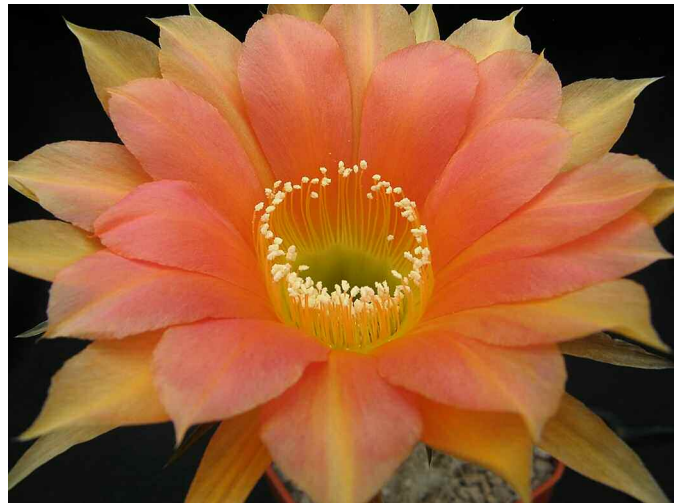


Fig. 4 EH 'Tondelayo'
An example of the various orange-hued hybrids he has produced



Fig. 5 EH 'Riptide'
This shows a different flower form

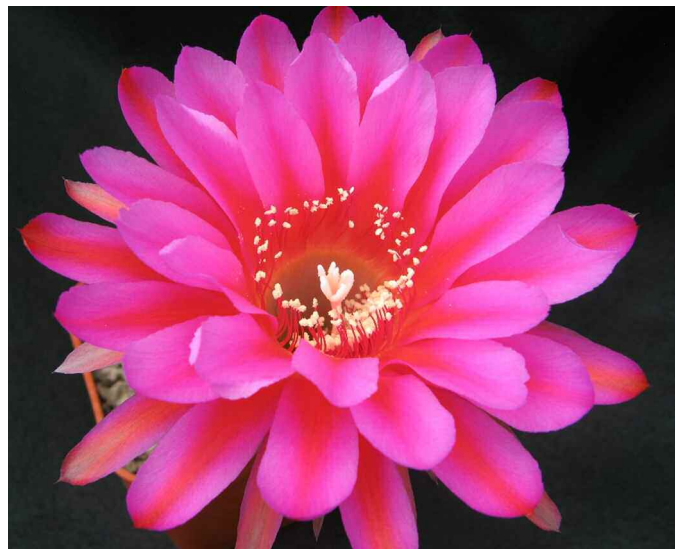


Fig. 6 EH 'Madame Pele'
For the last example in this all-too-brief look at the Schick hybrids I have chosen one of my personal favourites

The beauty of hybrids continued

without grafting to accelerate growth). Only then do you discover whether you have produced something special, ie a flower that improves on those of its parents and stands good comparison to other hybrids. The reality is that almost all of the progeny from a cross turn out to be indifferent plants or very similar to one or other of the parents. Brian Fearn, in his book *'The Echinopsis Hybrids of Abbey Brook Cactus Nursery'*, estimates that in 40 years of hybridising the success rate (in terms of a new hybrid worth a name and therefore vegetative propagation) was no more than one in 1,000 seedlings. The other implication of this is that you need quite a bit of greenhouse space for growing on the successive seedling generations to flowering size. For a person of only modest accommodation like myself, (12' x 8'), you are restricted in the number of crosses you can grow through to maturity and selection. As a result I tend to be a collector and a grower of hybrids rather than a hybridiser per se.

The level of information about a given hybrid is very variable. It may have a name, (so you hope it has been vegetatively propagated and therefore is true to the original), or not. It may have some crossing information (parentage, year of cross, hybridiser etc), or not. Some hybridisers are meticulous in terms of making such information available (the German hybridisers are usually good in this regard), others do not release much information other than the name (for example the Schick hybrids). As ever, the internet is a rich source of data and pictures from which to identify a plant. Just because a plant has not been named does not mean it is of poor quality in flower terms. A good UK example here is some of the individually un-named 'Lincoln Rainbow' hybrids produced by Bryan Goodey at Southfield Nursery. I have had some stunning plants from that particular source over the years.

So, as a collector, where do you obtain plants? Obviously fellow enthusiasts are a good source – join the *Echinopsis* Swap Circle group on Facebook. The two UK nurseries mentioned earlier are excellent sources of plants and have the advantage of letting

you see what you are buying. Finally, especially if you are looking for a specific hybrid, eBay is a great source, particularly as it provides access to material from German nurseries and hybridisers.

Next a few words on cultivation. These hybrids are not particularly challenging in cultivation terms. I grow all of my plants in a very gritty mix with coarse-grade cat litter and John Innes No. 2. They receive water from around the end of March until mid-October. For several years now I have been following a feeding regime advocated in the American journal by Elton Roberts, involving water with pH adjusted to 5.5–6 and low level (100ppm) ammoniacal nitrogen with every watering from May to early September. Winter greenhouse temperatures are kept above 5C using an electric heater that also runs the fan continuously to improve air circulation. Pests are all the usual suspects, so I try to treat once or twice a season with a systemic insecticide. I keep intending to look at Neem oil as an alternative treatment but have not got there yet! As you would expect with *Echinopsis* hybrids, cuttings and offsets root quite readily, at least until later on in the summer. I find the finer grade Tesco cat litter to be an excellent rooting medium.

So now let's have a look at some of the plants in my collection. The first plant (Fig. 1) is one of the older hybrids originally produced by Robert Gräser – TH 'Pisac'. This resulted from a cross between *Trichocereus schickendantzii* and *Helianthocereus grandiflorus* – the latter is now treated as synonymous with *Echinopsis huascha*. This plant flowers once, or occasionally twice, in the season in a 5" pot and slowly offsets.

The *Echinopsis* hybrids produced by Bob Schick in the US, provide a stunning range of colour and form (see previous page). Originally distributed by the ISI, many are still available today in Europe. Schick, in general, has not released the crossing details for his plants. The flowers tend to be in the general range of 9–13cm across, although one or two, such as 'Impulse' and 'Charlemagne' do get a bit larger (Figs. 2–6).

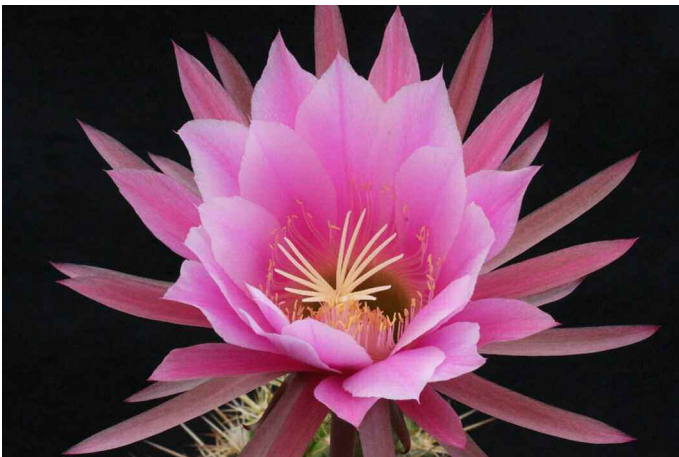


Fig. 7 TH 'Abbey Brook'

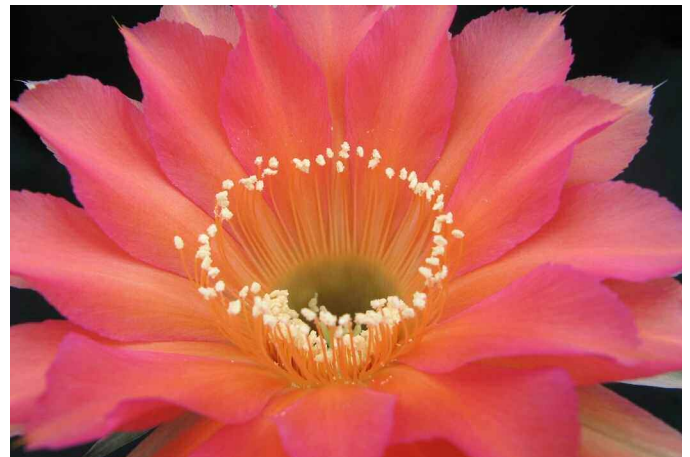


Fig. 8 EH 'Shot Silk'



Fig. 9 CL 'Lincoln Gem'

Next a few examples from the UK's most notable hybridists. First, a couple of plants from Brian Fearn at Abbey Brook Nursery in Derbyshire. The first is a spectacular *Trichocereus* hybrid 'Abbey Brook' the result of a cross between *Trichocereus thelegonus* and *Echinopsis kermesina* (Fig. 7).

The next is his lovely *Echinopsis* hybrid 'Shot Silk' – produced from a cross involving the old American hybrid 'Green Gold' (Fig. 8).



Fig. 10 An example of a CL 'Lincoln Rainbow' crossing

The next two plants are superb examples of the beautiful *Chamaelobivia* hybrids that Bryan Goodey, at the Southfield Nursery in Lincolnshire, has been producing over the last few years. The first is a lovely bicolour 'Lincoln Gem' (Fig. 9). The second plant is not a named hybrid but rather a beautiful selection from his *Chamaelobivia* 'Lincoln Rainbow' crossings. This one adopts a pendulous stem habit making it ideal to hang up in the greenhouse (Fig. 10).

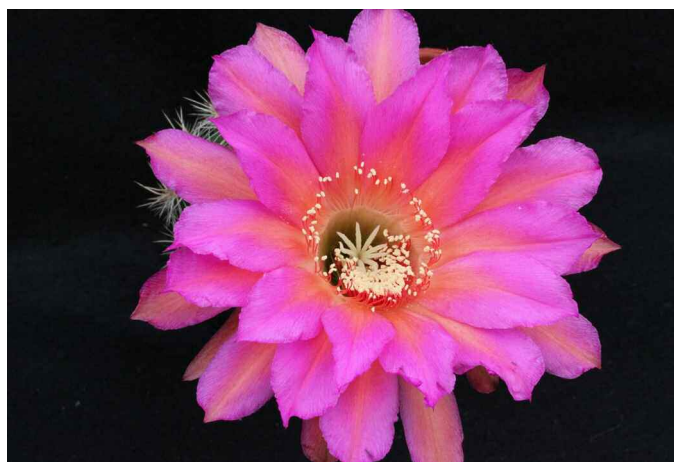


Fig. 11 EH 'Bismark'



Fig. 13 A Cantora hybrid

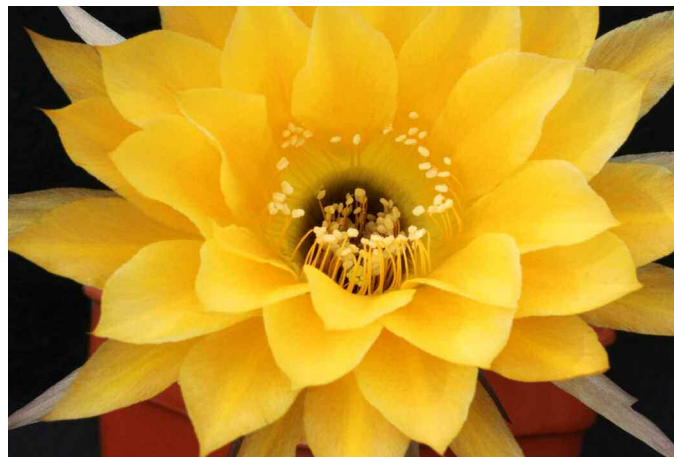


Fig. 12 EH 'Frühlingssonne'

This example of a Cantora hybrid, from my collection, has 15–16cm diameter flowers on a plant in a 4.5" pot.

The cross is by Bartels: EH 'Kleopatra' BEX 104 (Bartels) x TH 'Adolf von Bayer' (Liske). The latter plant introduces the Cantora genes as it is from a cross between two differently coloured Cantora parents.

The new plant has not been named and is referenced only by its cross designation BS 1736/2007.



Fig. 14 EH 1994-36

The German hybridisers have bred a number of spectacular plants over the last 20 years or so. Some have been produced from further crosses between the Schick hybrids.

The first of these is 'Bismark' produced by Eder from the cross EH 'Crepe Crusader' (Schick) x EH 'Scheherazade' (Schick) and selected by Rabsilber (Fig. 11).

Another nice example is EH 'Frühlingssonne' produced by Kellner from the cross EH 'Impulse' (Schick) x EH



Fig. 15 TH 'Dione'

'Herz Dame' (Rheingold), selection by Willi Hans (Fig. 12).

One of the significant introductions from the German group has been the so-called 'Cantora' hybrids. These arose from a cross between *Trichocereus candicans* and *Echinopsis toralapani*. This introduced a range of plants with much larger, multi-coloured flowers produced by modestly sized plants with generally attractive spination. Since their introduction they have been used extensively in further hybridisation (Fig. 13).



Fig. 16 HWH 'Helm's Neue'

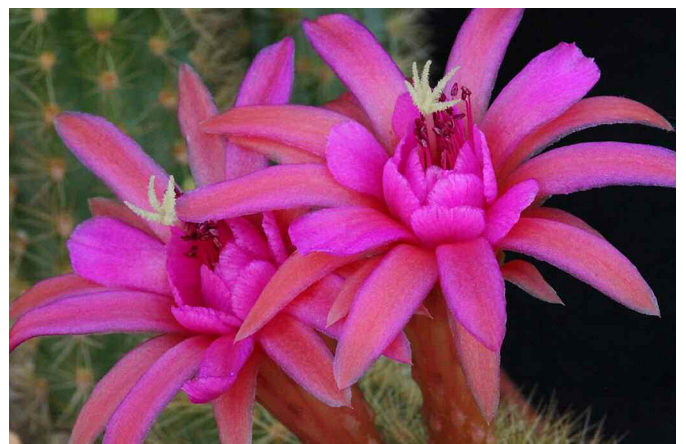


Fig. 17 HWH 'Hot Lipstick'



Fig. 18 HWH 'Engenhahn'



Fig. 19 HWH 'Humkes Honey Mouth'

The German nurseryman Andreas Wessner has also produced a range of hybrids in the past years but does not generally publish cross details. I have two beautiful examples shown on the previous page. The first is his cross reference 1994-36 (Fig. 14) and the second is the *Trichocereus* hybrid 'Dione' (Fig. 15).

Over the last two or three years I have found my focus has shifted yet again on to the many wonderful hybrids derived from *Hildewintera aureispina* (*Cleistocactus winteri* subsp. *winteri*) and *Akersia roseiflora* (*Cleistocactus roseiflorus*). Once again the German hybridisers have made a major contribution here. The plants are generally free flowering, often several times during the season. They do not tend to grow over-large, either as hanging basket candidates or short columnar forms. The fact that many make good hanging plants is a bonus in the eternal quest to free up greenhouse bench space. I will complete this very selective and personal review with a few examples from my collection.

One of my most favourite plants is HWH 'Helm's Neue' (Fig. 16). This makes a lovely hanging plant that flowers from an early age abundantly and frequently. It flowers from early in the year (April), well into November in a mild season. It will frequently carry viable buds through the winter ensuring an early resumption of flowering the following year. The flowers are typical *Hildewintera* in form and the plant resulted from a cross between *Hildewintera aureispina* and *Chamaecereus silvestrii*.

The German hybridiser and nursery man Michael Kiessling has produced some very attractive *Hildewintera* hybrids. I particularly like HWH 'Hot Lipstick' (Fig. 17) which grows steadily as short stubby stems, liberally producing iridescent red and purple flowers. It derives from a cross between HWH 'Helm's Neue' (see above) and EH 'Madeira'.

The next example, I think, beautifully illustrates hybridisation at work in terms of the interplay of the genes from both parents. This plant is HWH 'Engenhahn' (Fig. 18) which was produced by the



Fig. 20 HWH 'Otto Schultz'

German hybridiser Klaus Rippe from a cross between *Hildewintera aureispina* and *Echinopsis eyriesii*. This is one of the *Hildewintera* hybrids that adopts a short columnar habit of growth. The resulting plant has *Hildewintera* style flowers but much larger than in the *H. aureispina* parent. The flowers are carried on a stem with very short spines, a trait from its *Echinopsis* parent.

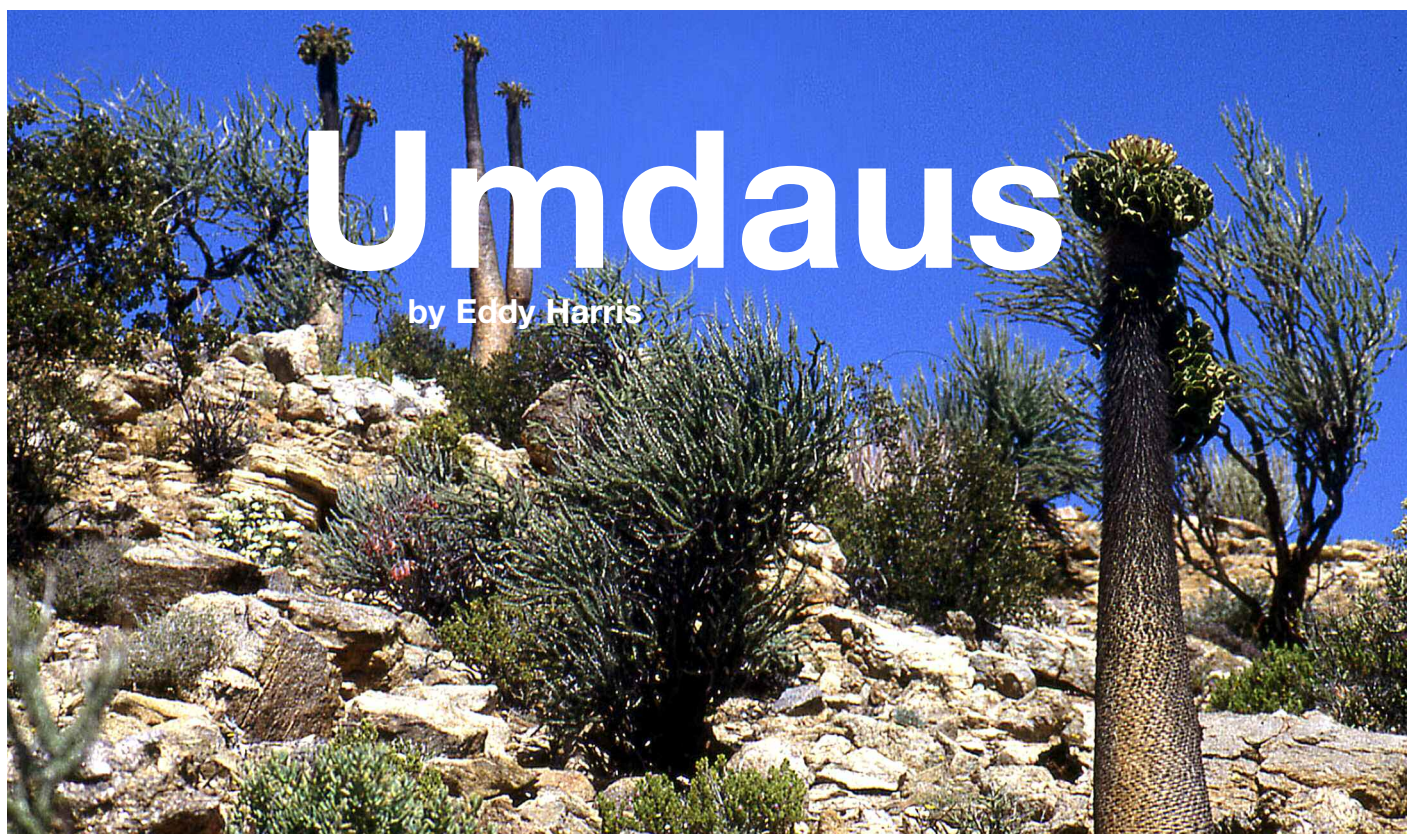
My last three choices, amongst the *Hildewintera* hybrids, showcase plants where the *Hildewintera* style of flower is suppressed and a much larger *Echinopsis*-like flower results. The first is HWH 'Humkes Honey Mouth' (Fig. 19), by the German breeder Heinrich Humke from a cross between HWH 'Butterfly' and an un-named *Pseudolobivia* hybrid. The result is a plant with a thick, trailing stem clothed in long fox-brown spines. These come from the *Hildewintera* parent, which has the spiny *Trichocereus vasquezii* as one of its parents. The flowers are large, white with yellow tones and come in small flushes once or twice in the season.

The second plant in this group is HWH 'Aurora' produced by the German breeder H.G. Noller (see the front cover). The cross involved the *Hildewintera* hybrid 'Noller 2' and, unusually, *Arthrocereus ibicuitensis* (long since reduced to synonymy with *Echinopsis calochlora*). The resulting plant is a short, spiny column that bears fabulous large flowers with long tubes in peachy-pink tones.

The last plant, in this very selective review, is 'HWH Otto Schultz' and is the result of a complex cross involving *Hildewintera aureispina*, *Akersia roseiflora* and *Echinopsis eyriesii* var. *grandiflora*. The plant grows as a short spiny column with the glorious two tone flowers you can see above.

I hope this short look around some of the hybrids in my collection encourages the reader to go out and try a few. It can become quite addictive! ■

Photos: Peter Cupial-Jones



Umdaus is a small region in the Eastern Richtersveld which is particularly rich in succulents. I have visited it twice with different travelling companions.

I first went to this area on my very first visit to South Africa in 1995. Prior to going, John Ede, one of my two travelling companions and I arranged to meet up with Derek Tribble, who had been to South Africa many times, to try to arrange a rough itinerary which included this area, as we were aware of its existence and some of the plants that grew there. Derek, as one might expect, came up trumps and not only told us of places to visit, but also suggested what maps we should get, what equipment we might need and also what plants we might find in the various areas that he suggested. So, with this information under our belts, we felt that we were off to a great start and looking forward to experiencing the country and seeing the suggested plants. What he did not tell us in any detail were the road conditions we would experience and the strong possibility of getting a puncture on them, in the middle of nowhere. John did most of the driving on the trip, I acted as guide and map reader in the passenger seat

and John Frew our third member sat in the back and, although he denies ever saying it, on occasions uttered "This is bl***y stupid!". To which I replied, "Where's your sense of adventure?".

This first visit to Umdaus took place during the second week of our three-week trip and finding the way was relatively easy as we were staying in Port Nolloth which is on the south-eastern edge of the Richtersveld. We duly found the track which led to the site and, after negotiating the sandy dried up bed of the river which crossed the track three times, we eventually reached Umdaus.

Our plan was to find *Pachypodium namaquanum* which, Derek assured us, grew on the slopes of Umdaus but, despite lots of looking, we could not see it. We parked the car and walked in towards the lower slopes and on the way we were pleased to see a number of plants of *Conophytum* (*Ophthalmophyllum*)



Fig. 1 *Conophytum maughanii*



Fig. 2 *Conophytum flavum*



Fig. 3 *Tridentia umdausensis*

maughanii growing in the ground (Fig.1). These were very hard to see as they were flush with the soil and I managed to walk all over them before seeing them, fortunately without damaging them. Close by were clumps of *Conophytum flavum* (Fig. 2) and a member of the Asclepiadaceae – *Tridentia umdausensis* (Fig. 3), but still no pachypodiums were to be seen.

We then explored a small koppie near the base of the escarpment and found a fairly large population of *Conophytum (Ophthalmophyllum) longum* (Fig. 4) growing in a large grit pan at the base of one of the rocks.

Now, being closer to the escarpment, we noticed a few vertical black shapes scattered on the hillside and on



Fig. 4 *Conophytum longum*

walking towards them, we found that they were the pachypodiums we were seeking. Once we had seen one, they seemed to appear everywhere and we duly took photographs. All of them were mature plants with little if any regeneration to be seen and some of them were in flower (Fig. 5). However, because they were all at least five to six feet tall it was difficult to take a decent picture of the flowers. I had to find one that was close to one of the rocks, which I managed to climb on to, and was then able to get a decent picture of the flowers (Fig. 6).

Looking around the area it was very obvious that the flora was exceptionally rich in its variety. As well as the pachypodiums there were large *Ceraria namaquensis* bushes everywhere, five foot high clumps of *Aloe ramosissima* (Fig. 8) and mature plants of *Sarcocaulon crassicaule* (Fig. 7) scattered around the hillside. Definitely a place to visit again.

I did in fact revisit the site again during the last of my six trips to South Africa in 2008, but this time in the company of David Kirkbright and Rodney Sims. David had never been to South Africa to look for

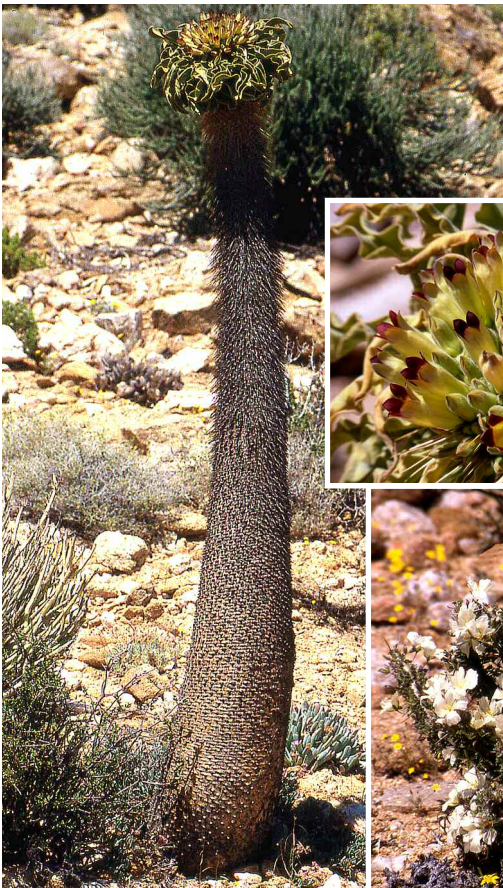


Fig. 6 (below)
Pachypodium namaquanum
flower



Fig. 5 *Pachypodium namaquanum*

Fig. 7 *Sarcocaulon crassicaule*

Fig. 8 *Aloe ramosissima*

Umdaus continued

plants, so Rodney, who had also been there several times, and I compiled an itinerary that would give him a taste for the country and allow him to see a wide range of plants and habitats, including Umdaus.

Once more we found the track leading to Umdaus and, after negotiating the dried-up river beds again, eventually found our way back to the Umdaus area. Once again there were no plants of *Pachypodium namaquanum* to be seen, so we parked the car and walked towards the escarpment where we thought they would be. We found lots of other plants growing all around us but no pachypodiums. These included *Conophytum longum*, *Conophytum flavum* and its subspecies *novicum* (Fig. 9) and the *Tridentia* again, but no pachypodiums. However we did come across an area full of very large



Fig. 9 *Conophytum flavum* subsp. *novicum*

some 120mm to 125mm in size and all of the plant was on view. The plant I found was some 160mm in diameter and in excellent condition (Fig. 11). There were also several stone crickets to be seen, each some 10cm long, which would comfortably fill my hand (Fig. 12).

Having walked over quite a wide area of the surrounding countryside we decided to have some lunch and then try elsewhere. Having finished lunch earlier than the others I decided to look around the area and see what other plants I could photograph.

I took pictures of several bushes in flower (Fig. 13) and my final shot was a telephoto shot of a distant ridge about a mile or more away. When I then examined the image I then saw several vertical lines which were



Fig. 10 Typical *Avonia alstonii*

Avonia alstonii and decided to see who could find the largest plant, a contest I won. My past experience of seeing this in habitat was a very cryptic plant with just the stipules of the plant showing above ground and plants only about 25mm in diameter (Fig. 10). But these plants were all much bigger than this, being



Fig 11 *Avonia alstonii* – the winner

obviously Pachypodiums situated on the skyline of the ridge, but although we then moved further down the track, we never seemed to reach the ridge and eventually ran out of time, so that was the closest I got to them. Maybe another time! ■

Photos: Eddy Harris



Fig. 12 Stone cricket



Fig. 13 Flowering bush (*Jamesbrittenia racemosissima*)

Did dinosaurs eat cacti?

or when did the very first cacti start to evolve?

by Sheila Cude

Did dinosaurs eat cacti? Possibly, but probably not. But, in the absence of any useful fossil evidence, I think the real answer to this question is that we just do not know.

All we have to go on are some fossilised pollen in packrat middens, from around 40,000 years ago, and some scraps of debris in ground sloth dung. Ground sloths flourished from the early Pliocene, roughly 5.3 million years ago (mya) to the end of the Pleistocene, a mere 11,700 years ago. Both of these are a mere blink of a geological eye, and so are of no real help.

To put this in context flowering plants or angiosperms (angiosperms = plants with enclosed seeds) diversified rapidly during the Cretaceous period (approx 145-65mya) and the oldest caryophyllid fossils (the order to which cacti belong) also appear in this time period. Early cacti appear to have evolved from Portulacaceae and probably looked like shrubs or trees, similar perhaps to modern day pereskias. I should say here that I do not propose to try to unravel how they evolved, which is beyond the scope of this article.

Theories on when Cactaceae first began to split from Portulacaceae range from around 100mya to as recently as 20mya. A number of theories suggest that cacti first evolved during the late Cretaceous period, approximately 90-65mya. More recent studies suggest they first appeared in the late Eocene to early Oligocene periods, around 35-30mya. They may well have first evolved in the north-western part of what is now South America, in what were then sub-tropical conditions. As cacti evolved they adapted to more arid environments. This could have been driven by the uplifting of the Andes, around 25mya, which led to drier conditions in the areas where they were growing.

However the current diversity and number of species of cacti probably arose only during the last 10-5 million years when there was a general shift towards more arid environments. Other succulent families, including the Aizoaceae and Agavaceae also diversified during that time. This could also explain the lack of fossil cacti as the sort of environments where they grew were not conducive to producing fossils. South America did not meet up with North America until around 3mya

at which time cacti were able to diversify further into the northern continent.

None of this explains the evolution of the epiphytic cacti, or the location of *Rhipsalis baccifera*, the one cactus which grows in the Old World.

For many millions of years South America and Africa were snuggled up together forming part of the supercontinent Gondwana (which, for part of its life, formed the southern part of the even bigger supercontinent Pangaea). Joel Lode in '*The Taxonomy of the Cacti*' suggests that perhaps cacti first evolved in the African part of this continent and diversified into the American part, leaving *Rhipsalis baccifera* as a sort of evolutionary dead end. This would seem to put the first appearance of cacti at a much earlier date, as South America and Africa began to part company at around 140mya.

As stated above we have very few traces of ancient cacti but, in 1926, it looked as if this would change when Earl Douglas (with his wife Pearl) discovered what appeared to be impressions of an early *Opuntia* in shale beds in Utah, dating from some time in the Eocene (roughly 56-33.9mya). The specimen was said to comprise three stem joints, with what appeared to be areoles, with a 'fruiting structure' and three detached stem joints. The plant was named *Eopuntia douglassii* and described by Ralph W Chaney in the American Journal of Botany, October 1944. I like to think that there was much excitement in paleobotanical circles over this find. Unfortunately it was short-lived as in 1962 *Eopuntia douglassii* found itself reassigned to *Cyperacites* and became a form of sedge. Its pads were transmuted to rhizomes and its areoles demoted to root scars.

So, did dinosaurs eat cacti, and when did the earliest members of the Cactaceae start to evolve? The answers remain shrouded in uncertainty, which I suspect this article has done nothing to dispel. ■



A modern-day *Pereskia* – *P. grandiflora*

Photo: Damien Boilly used under licence by [Creative Commons](#)

References

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Cactus Crawl 2016

The Reunion Tour

by John Watmough

Thursday

(Or, for one over-keen individual, Wednesday.)

We assemble at Capel Manor and dispense with the traditional arm-waving and name-calling accompanying the parking of our cars. Thanks to Roger Day's good offices we have secured permission to leave our vehicles in the vast acreage of the park. It is not a coincidence that James lives round the corner. Good temper is therefore maintained except for the fact that every time the block with the toilets is opened a member of staff immediately comes and locks it.

The second change to our ordered lives is that although Nicky, our indispensable guide, is still with us, the coach is now inscribed 'Crusader Tours' and the driver is not Trevor (who knows what cactus people are like) but Brian, who is in for a shock. Unfortunately Trevor has had a stroke, (best wishes for a quick recovery). But Crusader Tours proves to be the middle eastern subsidiary of the excellent Mott's of Aylesbury, and Brian stays cheerful at all times, even in our company, and is a first-rate driver.

James Gold, our new capo, has allocated seats according to the Joyce Jackson principle of 'perceived respectability'. Your correspondent has always been placed below the salt, or behind the Harpic, rather. But it is strange that Eddy Harris should share this lowly status.

It is a straight run to Ashford for the Channel Tunnel. We eat our packed lunches between Junctions 25 and 26 of the M25. Brian inserts our coach on to the train with a double flick of the wrist.

The next stop is at Rump in Belgium (neither one

thing nor the other, as Churchill said of a new MP called Bossom). The nursery is called Cactusflower and it is well-known to visitors to ELK for its wide range of plants. Thus, having shaken the moths out of our wallets, we set off for our new domicile, the converted cruise liner SS Rotterdam.

Alas, our members, heirs to a great seafaring nation, cannot tell port from starboard, the sharp end from the blunt end, or even a binnacle from a barnacle. Most eventually find the bar, however, and consume a fair quantity of 9% alcohol, mahogany-coloured beer. It is called Weltschmerz, or perhaps Brain Death. I can't read my notes.....

Friday

James makes it very clear that we are leaving at 8.00am sharp, Central European Time, and no excuses will be accepted. Sadly, at 8.00am someone is missing and, alarmingly, there is a man close to the ship being lowered by a cherry-picker to water level. But this man is only checking the pre-depotting level of silt in the Nieuw Maas. So James takes a posse of hard men on to the ship to search it from crow's nest to keel. Eventually they find our missing member somewhere between the bilges and the chain locker wondering where 'Uitgang' leads to. So we are 33 minutes late



Ornithogalum sardienii

Photo: David Traish

(I am instructed to be precise on that point) leaving Rotterdam. There is fog all the way to Düren, plus an unwelcome epidemic of flatulence blamed on the Nine Per Cent.

At Piltz, those of us who are, through senescence or Brain Death, too slow getting off the coach, are rammed in the back with plastic trays and reviled. Piltz is excellent, as always. But there is a queue for the coffee, a queue for the toilet, and a queue to pay for the plants. Stirling appoints himself 'policeman' and drives folk back on to the bus so as not to be late for the next nursery.

The management have phoned ahead, and Ernst and Marita are waiting with open arms and cashbox. My Latin dictionary gives the word 'emax' meaning 'compulsively given to purchasing'. From this would derive the English word 'emacious', which ought to be the word of the tour. As ever, Specks has plants that nobody has heard of, are knobbly and ugly, very expensive, and highly sensitive to rot. These suddenly become 'must-haves'. James of course has to outdo everybody else. He buys a triffid, possibly labelled

Euphorbia, even taller than himself, and is indignant when a succession of fellow-passengers offer to cut it in half for easier packing.



James with the triffid *E. venenifica*
Photo: Alan Rollason



***Aztekium ritteri* in Piltz's collection** Photo: David Traish

Our third nursery in Germany is Ingo Breuer, where some humorous souls amuse themselves by trying to crush new members' pelvises between the rolling benches, while others consume ice cream next door. We take the route back through the villages without getting lost, and pick up the Dutch motorway system at Roermond.

In the bar the Brain Death is shunned by all thinking persons. Indeed, Stirling is being treated as an exhibit because he is drinking

tomato juice. There is always something new to see on every trip. Alas, our miseries are about to start. Service at dinner is so slow that numerous persons slope off to bed between courses.

Saturday

Since we are already in Rotterdam, it is only a short distance to the glazed-in section of the Netherlands between the Hague and the Hook of Holland. Our first stop is at Jan Westeijn's, opposite the Radijskwekerij (Radish Factory) down the little lane. The little dog is there to shepherd us in. There are lots of plants suitable for resale, and a lady has set up her own stall selling all sorts of oddments such as three species of *Cussonia*. The big dog shepherds us out again, but what do we see? Our coach is in the adjacent field, stuck in the mud. Last year an electric fence separated the field from Westeijn's premises, but it is not much use after Martin leapt on it. While most of us are buying plants, James is trying to extricate the coach with his jacket, bits of wood etc. Various phone calls



Three grumpy old men, with Ernst Specks. From left to right, Ian Armstrong, Ernst Specks, Alan Rollason and Stirling Baker



Stuck

Photo: Roger Day

are made, and a massive 1000 bhp tractor is summoned and attached to the coach; it hiccups slightly, and the coach pops out of the mud like a Dinky toy. Brian makes amends by getting out of the little lane at the first attempt – something no previous driver has ever managed.

The second stop is Van der Linden. This is the great pyramid of cactus nurseries and our new members are suitably impressed. Eddy is peeved because they only have 10,000 *Lithops* left out of their original 2,000,000. Members buy dozens of plants 'for the Branch raffle'. Nobody is tempted by the luminous spray-painted ferocacti. One man, obviously an athlete, manages to walk to the far end of the greenhouse and back within the hour allocated. The staff here use bicycles.

Next we call on our old friends Cok and Ine. Their stock is rather reduced, though many of us contrive to fill a tray. The *Haworthia* fetishists poke around



Help is at hand

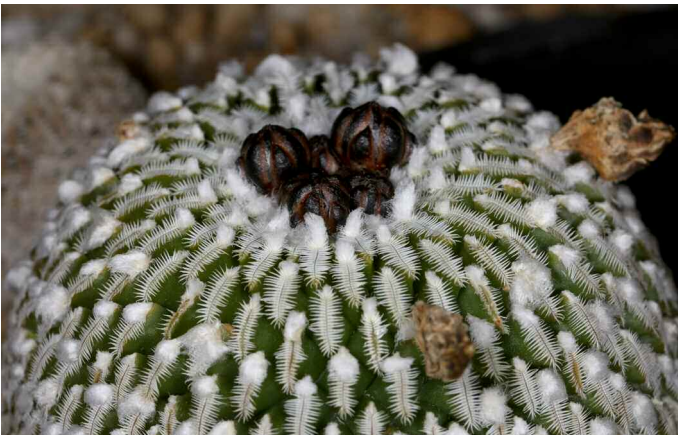
Photo: Roger Day

Cok's private collection while the rest drink the excellent coffee.

Fourth, but not last, we travel to Two Shovels at Lexmond. The hard cases elbow each other at the 'special corner'. Your correspondent, being obliged to give a talk on Lophophoras in a few days' time, purchases a number of these plants and thus becomes an international criminal on Sunday.

Last – and this is a new venture – we visit Gerrit Mellissen on Ian Armstrong's recommendation. I forget what it is like, but suppose that emacity still prevails, considering the number of plants that people come away with.

Back on board the SS Rotterdam we are all tired and hungry. But dinner service is just as bad as it is on Saturday, so people crawl away and pack their crates.

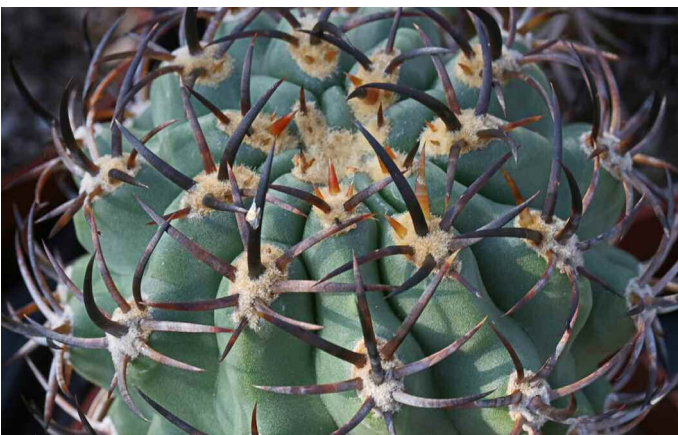


Pelecypora asselliformis

Photo: David Traish

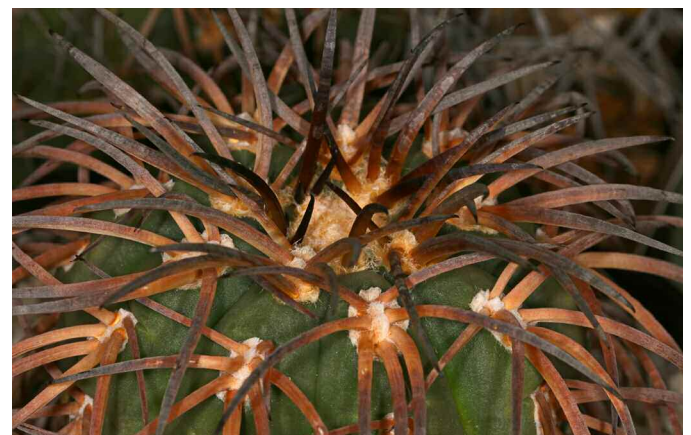


Mammillaria pectinifera (Solisia pectinata) Photo: David Traish



***Eriosyce* sp**

Photo: David Traish



Gymnocalycium spegazzinii

Photo: David Traish

Sunday

James has appointed Gary Hill to pack the coach. The hard men are there to make sure that nobody helps, because it is well-known that helping adds at least an hour to the time it takes to pack, and generates hostility and resentment. As a dedicated non-helper, I am amazed to see that the pile of boxes is bigger than the coach. However, Gary waves his wand with the phoenix-feather core, shouts “compactus”, and everything miraculously fits under the coach. Everything, that is, except James’s triffid. This is evidently immune to all magic except Glyphosate.

So, with the wheels very close to the bodywork, we lumber off to get some more plants. Yes indeed. Not Belgian chocolate or cactus gin, but more plants. We get them from Aad Vijverberg and in considerable quantities.

Obviously none of these new purchases will fit under the coach, so we travel home with seats, overhead racks, spaces between and under the seats, and laps stacked up with Vijverberg’s plants. James’s triffid stands in front of the clock, so that as the coach sways and the plant grows, the clock display keeps apparently changing. Maybe this is why we do not have time for lunch. But we make it back to Capel Manor without trouble.

At the end James asks the only silly question he asks all tour: “Would you like to do it again next year?”. But he cannot call it the Reunion Tour.

Also, experience indicates that the organiser needs five assistants: Nicky and the driver obviously, but also a nursemaid, a policeman and a magician. Thanks to James and to those who fulfilled those roles on this trip. ■

Cacti which grow on rocks

by Joe Shaw

A number of mammillarias have the ability to colonise rocks and are some of the first plants to grow on rocky surfaces.

Just a few specialised plants can grow in the tiny cracks between the rocks.

Plants have internal bacteria that are thought to help them, or at least to have no detrimental effect. Bacteria inside plants are called endophytes, (endo = inside and phyte = plant).

Plants of *Mammillaria fraileana* were used to study bacteria inside them. Scientists sterilised the plants and then determined if bacteria were present inside the cacti or seeds. They found four species of bacteria inside the plants.

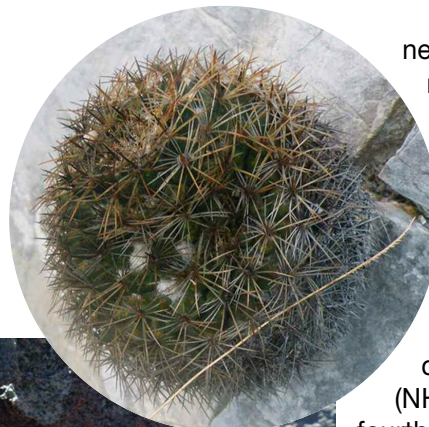
When cacti colonise rocky areas they face poor soils that have few nutrients.

Nitrogen and phosphorus are often in short supply. While these nutrients are present in some rocks, they are locked up tightly as part of the rock, and so are not directly available to colonising plants.

When the scientists tested the four species of endophytic bacteria, three of the four species could break down rock into ever smaller particles – a

Right:
Mammillaria sp
growing in a rock
crevice

Below: *Mammillaria*
dioica



necessary step for releasing nutrients. Furthermore, three of the bacteria were actually able to extract phosphorus from the rocks.

Nitrogen is abundant in the air, but it is in a form that the plants cannot use (N₂). N₂ must be chemically converted into a different form (NH₃) by some process. The fourth bacterium was tested for the ability to chemically convert N₂ into a form that plants can use. Amazingly, the bacterium was strongly able to produce useful nitrogen from N₂.

The bacteria live in the stems and roots. One hypothesis states that the bacteria help *M. fraileana* colonise rocks by helping the plant obtain phosphorous and nitrogen in an environment that is generally hostile to plant life. More work is needed to prove the hypothesis, but it is interesting to think about. ■

This item is taken from Oblog – a blog created by Joe Shaw with information on cacti and succulents and great pictures. See [Oblog](#)

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Gardening with succulents

Part 4 – More smaller succulents

by Paul Spracklin



Aeonium spathulatum in habitat

In the last article we started to look at the range of smaller succulents that can be grown. In this, and the next, we look at some more small plants we can use.

Crassulaceae

Aeonium

A group of rosette-forming succulent plants mainly from the Macaronesia archipelago, some of which are surprisingly hardy.

Aeonium simsii – a dense rosette to 8cm across with tiny hairs edging the leaves giving a very ornamental appearance, eventually offsetting into a clump. From Gran Canaria, in nature this grows into a mound in a similar way to houseleeks, filling crevices between and over rocks and tree stumps. Found at high altitude, often in shady, damp and misty conditions, mine has survived –8C and lengthy freezing though the bad winters of 2009/10. Commercial stock is often hybrid.

Aeonium spathulatum – a much-branched plant forming a small woody shrub with little succulent

rosettes on each branch tip. Its tiny, fat, spoon-shaped green leaves are usually marked on the underside with purple lines. Flower buds can be bright orange, flowers bright yellow, making it very attractive in flower. Found at high altitude on most of the Canary Islands it is hardy down to at least –6C, probably lower if kept dry.

Aeonium cuneatum – larger than the above species, this *Aeonium* from Tenerife has fleshier apple-green slightly glaucous, cup-shaped, stemless rosettes to 30cm or more that can fairly quickly offset into a large-ish mounding colony. Given perfect drainage they appreciate occasional watering, often growing to perfection in the wetter south-west of the country. Hardy to –6C or perhaps lower if dry in winter.

Dudleya

A group of rosette-forming plants closely related to *Echeveria* but mainly found in south-western states of the USA. Most are found in rock crevices and should be grown to emulate this if possible. Several species



Aeonium simsii in habitat



Aeonium cuneatum in habitat

Gardening with succulents continued

are worth trying and I have had success with the following over many years.

***Dudleya pulverulenta*:** – a stunningly beautiful plant, growing into a solitary rosette of flat, incurving leaves to 30cm across. The leaves are chalky white, covered with such a generous layer of powdery patina that it accumulates into what appears at first glance to be a mealy bug infestation. These age to look like brown paper. A spike of reddish flowers is produced from the side of the plant. Full sun and growing in a vertical rock face are the key to success.



Dudleya pulverulenta

***Dudleya cymosa*:** – this is a smaller-growing but clumping species, more closely resembling an *Echeveria*. Waxy silver leaves take on reddish tints when drought-stressed. Branched pink-ish red flower spikes open to give orange flowers.

Echeveria

A large genus of rosette forming succulents distributed mainly in Mexico. Often growing in rock crevices, some

species will grow epiphytically, all require excellent drainage.

***Echeveria elegans*:** – I have been growing this species in my garden for over 20 years finding it the most ornamental and easiest to grow. It has 10cm rosettes of fleshy, china-blue, incurving leaves which offset generously to make a mounding colony. In winter the leaves take on a pinkish hue that is exceptionally attractive. Then in spring/early summer nodding spikes of orange flowers on pink

stems complete the picture. Planted en-mass the effect is extremely picturesque.

***Echeveria agavoides*:** – this is probably the most impressive *Echeveria* species that can be grown outdoors. It is not quite as hardy as, say, *E. elegans* but will take down to -6C or lower if dry. As the name suggests it is reminiscent of an *Agave*, growing to a large rosette of 20cm or more across. It is extremely variable in appearance with many named cultivars.



Echeveria elegans



Echeveria agavoides



Echeveria secunda var. *glauca*



Echeveria rosea

Gardening with succulents continued

Leaf colour can vary from grey-green through apple green to pink with leaf tips and edges often showing dramatic dark colouration, some being deep maroon, almost black in colour.

***Echeveria secunda var glauca*:**

– a similar species to *E. elegans* but with thinner, not so succulent leaves that do not take on the pink hues in winter. They will colour reddish with age or drought. One of the hardiest species from very high altitude in Mexico.

***Echeveria x imbricata*:** – a hybrid created in the 1870s, this *Echeveria* grows into dense 12cm rosettes of thin powder blue leaves that offset generously into a tightly packed colony. Leaf margins can take on reddish hues, giving a highly ornamental effect. Another hardy plant that has taken –8C and a long freeze in my garden.

***Echeveria rosea*:** – an extremely ornamental species with, generally, open glaucous green-grey rosettes that in good light are tinged with pink. As flowering approaches the upper leaves flush deep pink and a tight cluster of buds starts to emerge from the centre, tinted with the same colour as the leaves. Eventually this elongates into a dense spike of flowers that open to a straw yellow. This has taken –10C unprotected in a friend's garden and grows in nature either on rocks or as an epiphyte in high altitude conifer forests. I have recently acquired a spectacularly coloured form with glossy green leaves and scarlet red flushing.

Graptopetalum

Succulent rosette-forming plants, related to *Echeveria*, of which one species is incredibly hardy.

***Graptopetalum paraguayense*:** – from Mexico rather than Paraguay this must qualify as being one of the most frost-tolerant 'exotic' succulents. I know of plants that have laughed at –15C unprotected. Ghostly pinky-white in good light, blue-ish with more shade, often developing a yellow-ish grey hue in strong light, these succulent rosettes develop a lax stem that trails and branches – grown



Echeveria elegans in habitat

on a vertical surface or tumbling from a pot shows this habit off nicely. It is a great plant for sharing – if the stems get too long cut them back and they will sprout from the sides. The tops will root, as will any detached leaves. At flowering time it is surrounded by a haze of small yellowish star-like flowers.

Sedum

A vast succulent genus of deciduous and evergreen perennials and shrubs. There are simply too many to list that are already well-established as garden favourites so I will just deal with a couple of my more unusual favourites.

***Sedum palmeri*:** – a colourful and hardy *Sedum* from northern Mexico with lax trailing stems of fleshy pale blue rosettes that individually reach 5 or 6cm across. During winter the leaves tint pink-ish red – this colour persists in early spring when delightful arching branched sprays

of golden yellow flowers tumble out of the centre of each rosette. Perfect for a rock garden crevice, steep rock face or hanging basket. Hardy to at least –10C. I have recently acquired a miniature form that looks exactly the same but grows to less than half the size of the type.

***Sedum oregonense*:** – this has 3cm rosettes of grey-blue leaves, tinged with red when drought-stressed, that slowly spread to form a closely compacted mat of small, fat, spoon-shaped leaves. Reddish stems of straw-yellow flowers complete the picture. From rocky places in Oregon and northern California. Not to be confused with *Sedum organum*, which is a different but equally garden worthy plant.

***Sedum praealtum/confusum/decumbens*:** – a confusing trio of plants from Mexico that are essentially similar, differing largely in their size and growth habit. All have glossy apple-green fat leaves and sprays of yellow starry flowers. *Sedum praealtum* is the largest, growing into a lax shrub – the meaner you treat it the better and tighter it grows. The leaves are more spoon-shaped, curving inwards attractively. It is the least hardy of the three, becoming damaged



Graptopetalum paraguayense



Sedum palmeri

at around -8C although it will take lower when dry. If damaged by frost it will often sprout again from the woodier stems. *Sedum confusum* – aptly named as I have most often seen this offered under the name *Sedum praealtum*! – is smaller, growing into a tangled profusion of foliage and knitted stems that collapse



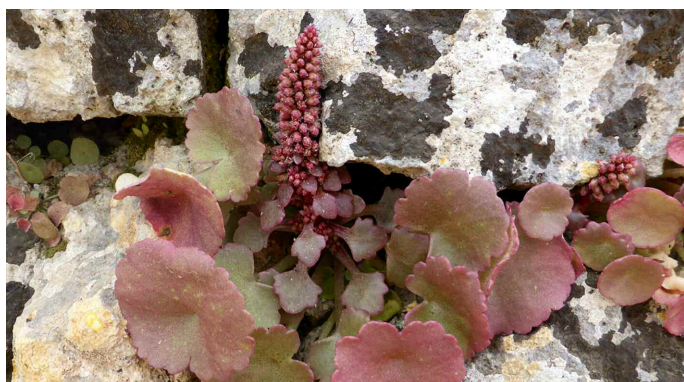
Sedum decumbens

and root as they go. *Sedum decumbens* is the smallest and makes very effective ground cover. The last two seem very hardy. All are attractive but *Sedum confusum* can be a little invasive.

Umbilicus

A genus of fleshy succulents, two of which deserve a mention.

Umbilicus rupestris: – a familiar British native, this forms a smallish dome of circular leaves attached from below by a central stalk to an underground bulb-like structure – the stalk is accompanied by a small dimple in the upper surface of the leaf at the point of



Umbilicus rupestris



Sedum oregonense

attachment. In spring a flowering spike is thrust upwards that has a tight cluster of straw yellow cup-shaped flowers. Usually the whole plant is apple-green. Often there are red tinges to the stem and, rarely, the whole plant is suffused with purple. It seems to be adaptable to any climate, the more rain the longer the leaves appear above ground. I have seen it in Ireland as evergreen and in Sicily dried to nothing but a spent flower spike by April. The navelwort can sometimes be a bit of a pest, especially in the wetter parts of the country, spreading enthusiastically by seed into every little nook and cranny. But it is so cute!

Umbilicus oppositifolius: – (more widely seen as syn. *Chiastophyllum oppositifolium*) from the Caucasus mountains. Another cute, evergreen, fleshy perennial plant with attractive toothed-margined, fleshy, apple-green leaves and extravagant arching inflorescences bearing cascades of yellow flowers. This grows best in shade and enjoys a little extra moisture – if happy it will seed around but without quite the enthusiasm of its cousin.

In the next and final article we will finish our look at smaller succulents, including cacti. ■

Photos: Paul Spracklin

Paul Spracklin is a garden designer with a specialist interest in gardening with succulents.

See his website [Oasis Designs](#)



Umbilicus oppositifolius