

# Gaultonia

Newsletter of the  
**Manchester Branch**  
of the  
British Cactus and Succulent Society



**Rebutia marsonerii (krainziana)**

## Summer 2009

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## **What Makes the Plants we grow Different and Attractive - Part II**

By Peter Bint

Succulent plants are considerably different in their growth forms from the majority of mesophytes. There are three basic types of succulents according to where they store their water. There is some overlap between the types:

**Leaf Succulents:** - these are plants where the leaves have evolved so that they are considerably enlarged and contain all the water storage cells.

**Stem Succulents:** - here the leaves (when present) have little or no function. The fleshy water storage cells have developed in the stems. These stems remain green except in old age when corking will occur in the lower stem to provide strength to support the weight of the plant body. Commonly these stems are ribbed or covered with tubercles. This helps them to expand or contract according to weather conditions.

**Caudiciform (Root) Succulents:** - the word root is slightly elastic because the swollen water storage organ may be all root, all stem or stem above and root below. Thus we use a neutral term, caudex, as a description of this basal storage organ. With such plants there is a division of labour. The thin aerial shoots, leaves and flowering stem carry out the photosynthesis while the caudex acts as the water storage chamber. Another distinction between caudex and stem succulence is in the fact a caudex is almost always never green, ribbed or tuberculate.

However, these leaves, stems and caudices provide great attraction for the succulent collector – some enjoying growing all forms whilst others are choosier in what they grow. Succulents provide much attraction via their armature. Prickles, thorns and spines are conspicuous features of many xerophytes. Each term has a specific meaning:

**Prickles:** - these are non woody outgrowths of the plant surface that do not connect to the conductive systems of the plant (food carrying system). These prickles will snap off cleanly when pushed. Familiar examples of this are present in the prickles found along the leaf edges of some Agaves and Aloes and also in *Euphorbia millii*.

**Thorns:** - these are modified woody branches some of which actually have their own vascular system. It is possible to see traces of leaves and buds on them. We find a great diversity of these among *Euphorbias*.

**Spines:** - these are modified leaves where the leaf blade has not developed and the leaf stalk is stiff, woody and pointed. One special form of spine, found in the *Opuntia* genus, is called a glochid. This is a small spine like structure which detaches with consummate ease and is barbed like a fish hook. This feature is also found in the main spines of *Opuntia* species. It makes *Opuntia* spines particularly hard to remove from the flesh. Though they are not poisonous they are an irritant and uncomfortable when lodged in tender flesh and they can cause swelling and pus bearing wounds to develop if the spines are not removed in those people with sensitive and tender skin. Not all cactus spines are straight there being many hooked spined species in *Mammillaria*, *Ferocactus* has some fierce hooked central spined species and many more can be found. Not only cacti bear spines as they are present in members of the *Didieriaceae*, *Sarcocaulons*, *Fouquieria* and even *Pelagonium spinosum*.

Though these appendages do not need to have a significant use, and there are many theories about this, they obviously do provide the plants with more than a beauty aid. They can obviously deter marauding herbivores from feeding on the plants and they can filter the sunlight thus providing protection from the relentless solar rays. Non 'spiny' plants have other defensive mechanisms such as irritating latex in the *Euphorbia* family and many *Asclepiads* whilst plants like *Lophophora*, *Ariocarpus*, *Echinopsis pachanoi*, *Selenicereus* and the *Stapeliae* have strong alkaloids present in their sap. The hooked spines mentioned previously are present only in cacti. These are successful propagation aids as the offsets from such species detach readily from the parent plant allowing these to be carried to new areas to root and grow once they fall from or are purposely detached by the carrier.

Flowers, especially amongst the cacti, can be showy and highly attractive. They are an adornment that we all cherish and wish they could be longer lasting as most only give us 24 hours of beauty. However, we must bear in mind that the plants cannot afford to waste valuable water in unnecessary adornment. They open, attract pollinators and then put their energy into the production of seed all within those first twenty four hours in so many cases. The flowers use various lures to attract a suitable pollinator. Colour is for the daytime and white for the night flowering species. Often there is a darker throat in day flowering species to guide the visiting insect to the right place to gather nectar, thus ensuring pollen is distributed onto the stigma and new pollen is carried to the next flower. What we do find is that plants that receive greater amounts of rain, eg *Schlumbergera* (the Christmas cactus genus) have flowers that last considerably longer than 24 hours. Where flowers are not large, more often in the other succulents, they make up for smallness by having inflorescences bearing dozens of the tiny blooms thus giving an equally splendid show compared to cacti and they are just as successful in attracting their pollinators. These do last considerably longer than the single day of the cactus flower as they do not waste water in blooming. Added to beauty many flowers do have a distinctive smell, no rival for the English rose it must be said, but equally successful. Smells do not have to be attractive to the human nose to be fruitful. Whilst flowers on some plants emit a citrus smell, there are others that fill the greenhouse with an agreeable perfume later in the day so that the scent meets you even before entering the greenhouse. This is true of many species in *Echinopsis* and *Discocactus*. Smell is essential in addition to colour as not all insects see colour as the human eye does. Not all pollinators are bees. There are beetles, butterflies, moths, bats and flies to name a few more. Some of these pollinators require a scent that is offensive to the human nose. *Pilosocereus palmeri*, a cereoid plant that is easily flowered in our collections, is pollinated by bats and the odour emitted is slightly unpleasant but totally successful in habitat. *Stapelias* and related genera have to rely on flies so the flowers have to both resemble and smell like rotting meat to successfully attract them. All these mechanisms have their own charm for the grower. A species of *Monvillea spagazzinii* that I successfully flowered many times, another night flowering species, emitted a smell that I can only liken to Brylcreem, the gentleman's hair accessory (not a smell of which our younger members will have any knowledge but quite pleasant I can assure you).

Seed pods also add their own attraction to a plant, often through the dull months of winter. Many species produce bright red to orange pods designed to attract the seed gatherer and spreader. Large, juicy fruit like pods attract predators that need that form of sustenance to live. Having devoured the fruit the seed is dropped where the meal has occurred providing the opportunity for a new plant. Then there are those creatures, often birds, which eat the whole seed pod and pass the undigested seeds coated in a natural fertiliser aiding the continuance of the species.

Novel forms of growth also add to the magnetic captivation provided by these succulent gems. As though the plants are not attractive enough, nature has chosen to provide abnormal forms through fasciation. The most common form is the crested or cristate plant, loved by many, hated by the 'purist'. The title comes from the Latin 'cristatus'. Nobody can explain why the growing point suddenly decides to elongate creating a fan. In some cases the fan becomes so contorted that it becomes a brain-like, irregular mass. At this point the plant is in severe danger of literally strangling itself and propagation is desirous. Though some crests are fully capable of growing on their own roots the greater majority need the assistance of being grafted to be successful, where they will please the beholder for many years. Fasciation does not necessarily affect the whole plant. Often you will find a single stem has become cristate while the rest of the plant is perfectly normal.

Allied to these are plants with monstrose growth of which *Cereus peruvianus* has been known for well over a century. In this phenomenon growing points multiply so that many stems are present instead of a single stem with a single growing point. This tends to proliferate over the whole plant giving a strange appearance that can indeed be called a monstrosity. Other growth changes include spiralled ribs, disorganised and discontinuous ribs, absence of spines where the plant is normally spiny and proliferating flower buds.

Variation is another source of novelty strongly sought after by many growers. This is caused by an absence of the green pigment, chlorophyll. The affected tissue may be variously coloured white, cream, yellow and pink. The variety of *Gymnocalycium*, 'Hibotan', discovered and propagated vastly in Japan, is bright red and other colours have also emerged through the years. Where there is an area of chlorophyll the plant will thrive, though growth will be slower than with the normal specimen, but where the plant is wholly or practically without chlorophyll it must be grafted on to a green stock to survive. Whilst the stock retains its greenness the variegated plant will thrive but should it reach a point of being unable to produce chlorophyll then regrafting will become necessary. Almost any plant can display variegation but why it happens is unclear. It seems to be mainly among cacti that a total lack of chlorophyll occurs. Often, in the other succulents, enough of the leaves or stems contain chlorophyll to bear the job of food production.

I feel these are many of the factors which draw us to the hobby of collecting succulent plants. I do not claim it is an exhaustive list but it is certainly enough to think about. I sincerely hope you will be stirred by this article to cherish your plants even more dearly and to perhaps study them more closely, even with a magnifying glass to see those points of beauty that are invisible to the naked eye. I thank Gordon Rowley most profusely for enabling me to write this article through the auspices of his wholly enthralling and entertaining book "An Illustrated Encyclopedia of Succulents".

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### **A Quick Look at..... Rebutia Steinbachii**

John Jones

One of the larger Rebutias - variable with 4 sub-species, which we bought at the Warrington Cactus Mart this April.

(I bought it because it was flowering then, and is still doing so [June])

Pseudonyms - *Sulcorebutia steinbachii*, *Weingartia steinbachii*, *Rebutia totoensis* (which is what ours was labelled) etc.

Habitat: Eastern Bolivia

Eventually forms dense clusters

Ribs: 12-26

Spines: slow to develop on new areoles

Central: 1-3 0.4-0.8 long

Radial: 6-25 1.0 ins long



## The Digitisation of your Favourite Slides

By Chris Leather

Over the last year or so we've seen an increasing number of talks where the speaker has presented their photographs via a laptop computer rather than using the more traditional slide projector. This has come about because digital cameras have improved over recent years to the point that they are, if used correctly, as good as, if not better than many of the old 35mm film cameras.

Like most people I myself have not used a 35mm camera for several years. All the photos I now take are viewed using my computer. The computer also allows me to put together "slide shows". This has left me with a problem. What to do with the old prints and transparencies that are stored in several drawers of a filing cabinet in the study.

Fortunately the computer has, with the right equipment, the capability of converting these print films (via the negatives) and slides into digital images. To do this we need a flatbed scanner. For those unfamiliar with computers a flatbed scanner is very much like a photocopier except that instead of burning a copy of your original onto a new piece of paper the scanner converts the scanned image into a large number of pixels (very small coloured dots) which are saved as a "jpeg" file on the computer.

Part way through last year we were "lucky" enough to have our computer blow up on us. We had to get a new one and this has been good for us as it is far more powerful than the old one. We quickly found that it was more than capable of coping with the large files needed for the scanner to work properly. I started wanting to digitise my photos. However, if you are wanting to scan "see through" media (i.e. photographic film) you cannot use a normal flatbed scanner. For this you need a special scanner.

The flatbed scanner that we already had was an Epson DX6050 (this is also our printer). We were a bit unsure exactly how an additional scanner would fit into the system and to avoid as many conflicts as possible we opted for another Epson scanner. This time it was an Epson V200. The cost was about £60. We needn't have worried. Once everything was connected clicking on the "scan" icon on the desktop brought up an option box on the screen to let us choose which scanner we wanted to use.

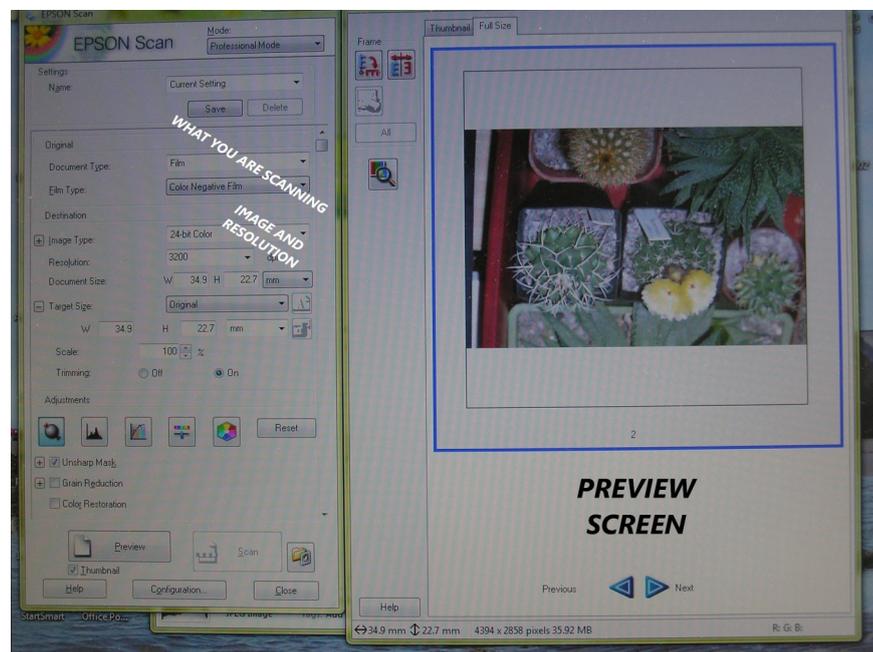


Under the lid of a normal scanner is a white plastic plate (much like a photocopier). The special scanner for film has instead a light bar under the lid that shines light through the film of the negative or transparency. There is a plastic holder that holds the film in place (see picture on previous page).

Once the lid is closed you select “preview” on the program and this then makes the scanner work out “where the picture is” and trim round the pictures it finds. If you are happy that it has picked them up correctly you click “scan” and then the scanner proceeds to scan the images onto the computer. This can take about 2 minutes per negative/slide so it’s handy to have a comfy chair and a book to read!

There is space to scan four transparencies, or six film negatives, at once and the scanner and software sorts out the images and gives them all different names (i.e. pic001, pic002, pic003 and so on). Negatives are processed in exactly the same way. You only need to tell the computer you are scanning negatives and it automatically converts them into a positive image! There is only one thing that can go wrong that you need to watch for....make sure the film is in the right way round! Otherwise the image can come out upside down – or worse back to front!

Before you make a full start on scanning the images it’s really important to make sure the other software packages you are going to use (Movie Maker, Photo packages, etc) can handle the size of the images you are going to produce. My computer seems quite comfortable scanning images at 3200dpi (dots per inch). Other (older) computers may struggle with that. Most digital cameras (on the higher settings) produce images around 1 to 2 Megabytes in size and ideally your scanned images should be around that size also.



Once the pictures are on the computer it is important to make sure they are backed up on to DVDs. Unlike pure digital images you obviously cannot “lose” your scanned images because they are still on the film – but what you can “lose” is the time you’ve used to scan them in.

If you get organised you can have lots of folders on the computer and up to a point this will allow you to sort the images into a logical system.

As with digital images there are lots of things you can do with the pictures – Make slide shows, email them to friends and relatives, put them on websites – the list is endless. A final word of warning. Remember, you are looking at “old pictures”.... and once you’ve started it is very addictive and before you know it you’ve spent the whole afternoon scanning the pictures in.

“I’ll just see what is in this next slide wallet....”

## OUTDOOR TYPES

by Sylvia Jones

The cactus magazine had been encouraging us to try growing cacti and succulents outdoors to see whether they could withstand our winters. Living about 700ft above sea level, in the rain shadow of Pendle Hill and exposed to winds which took part of our roof off and demolished the car port the previous winter, I thought our garden would possibly provide a good test. The exceptional cold (-9C) and heavy snow made conditions more rigorous than expected.

Here are the results and the photos of survivors, taken in June.



*Sempervivum tectorum* (left) - the common species, is supposed to be hardy, but how hardy?

This border, in the highest and most exposed part of the garden, was under a foot of snow for a week and the plant is still thriving.

*Sempervivum arachnoideum* (right) - kept in a pot outdoors but under cover (dry) and planted out again in March.



I had made up a draught-proof hanging basket with succulents which spread or trail, and left it in place over winter. This *Pachyveria* survived although its leaves had taken on a purplish tinge. *Kalanchoe beharensis* and *Ceropegia woodii* didn't (fortunately I had other copies of them). A deciduous variegated *Sedum sieboldii mediovariegatum* sprang up again in Spring.



I'd put some succulents in large 12 inch shallow terracotta pots to give a draught-proof display. In November we moved them onto the patio which has a plastic roof and placed them behind a heavy bench to stop them being blown over. We kept them dry until April.. After a bit of tidying up and top dressing, they are looking good. (photos 4 & 5)

*Sempervivella alba*

*Echeveria glauca*

*Sedum rubrotinctum*

*Sempervivum arachnoideum*

*Echeveria glauca* (right) - down to +7C according to the book, but this survived -9 and lived to tell the tale. Tips of leaves took on a reddish tinge but new growth is back to normal blue-green - and it's coming into flower.

An *Echeveria* left in the border had rotted but I was able to rescue an offset which had been protected by the dead parent plant and that is doing fine now - suggesting that plants might survive in the ground if covered with straw etc. for protection.



A small bed of Sedums up to the house including:  
*Sedum spathulifolium* - grey leaves, yellow flowers  
*Sedum spurium*  
*Sedum album* - reddish leaves bottom left



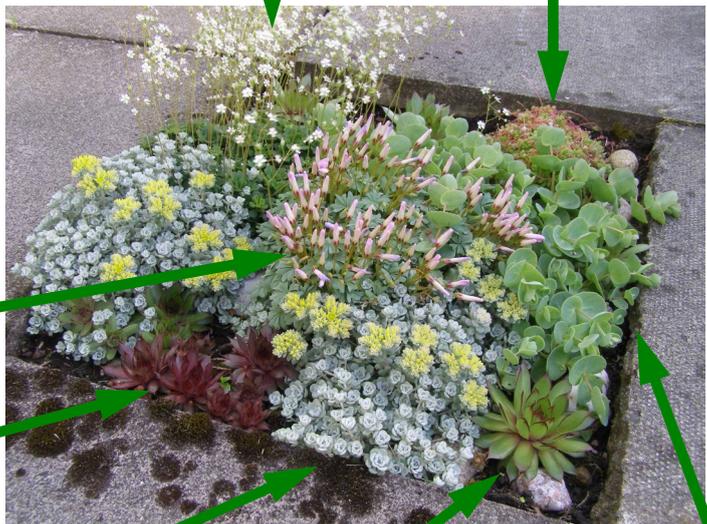
*Saxifrage cuneifolia*

*Sempervivella alba*

These small beds (photos 7 & 8), the size of a paving flag, have been planted with succulents and are open to the elements.

*Oxalis adenophylla*  
(pink flowers - closed)

*Sempervivum tectorum*  
(red leaved variety)



*Sedum spathulifolium*

*Sempervivum tectorum*

*Sedum caucicola* - died back over winter but sprouted in spring



## Return to Wythenshawe

In early May, five of us returned to Wythenshawe Park to tackle the increasing problem of *Oxalis* growing in every awkward place possible (particularly in the middle of the *Opuntias* on the right). After 4 hours of graft, the majority was removed (for now).

The greenhouses are now officially open and are well worth a visit. Most of the cacti and succulents we planted are doing well and many are flowering. A larger range of photos can be seen on our Society website.

## Is this a record? (probably not!)

The *Mammillaria* on the right (of unknown species) is just flowering.

I put the seed in a pot to germinate on 1st June 2007, which means that it has flowered in about a week under two years after germination.



## Daisy Nook

Chris has just found and has started scanning his slides of our old Cactus shows at Daisy Nook (near Oldham). Here is the first. Well before our time but someone looking at this must remember some old friends? This and others will eventually appear on our website.

## **Have you got any snippets, like the above, that might be of interest to other readers?**

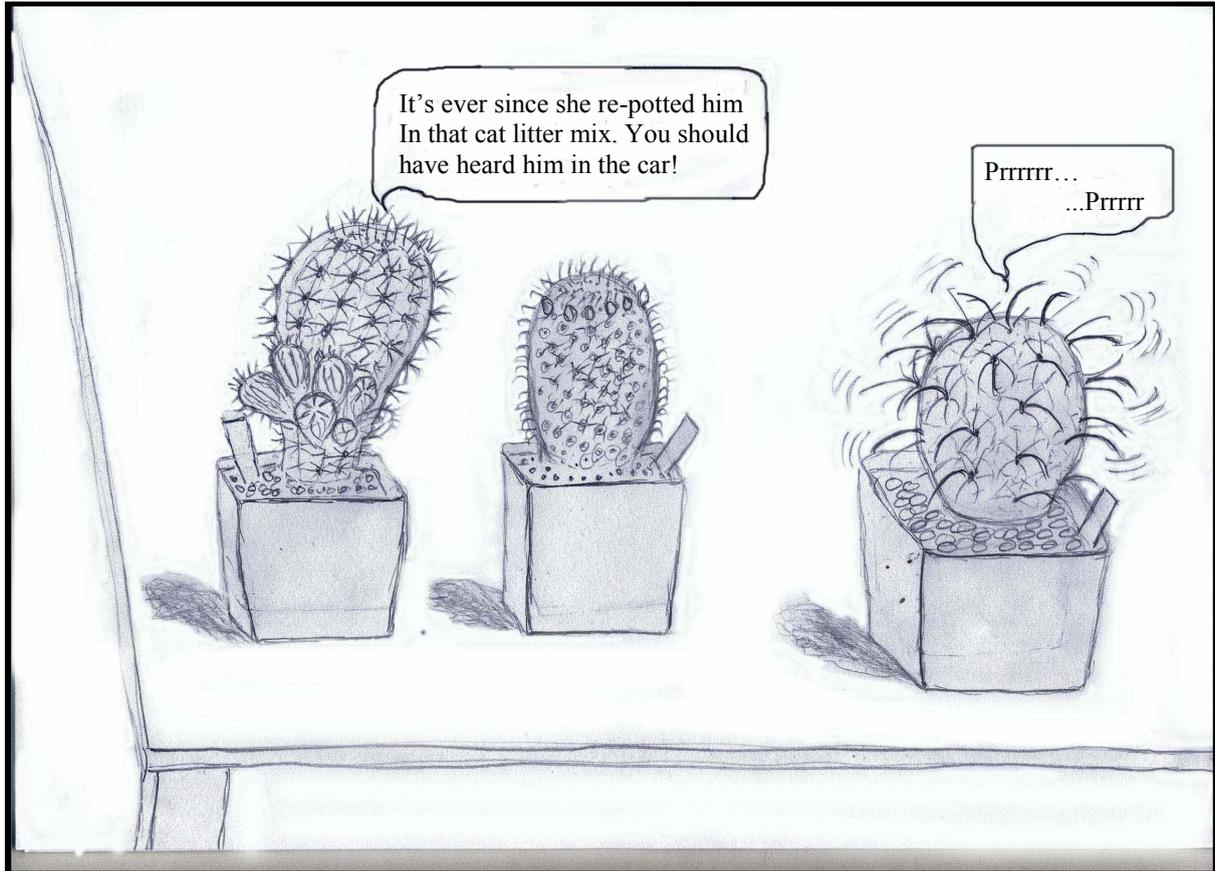
We welcome any pieces, long or short, for future issues and we can type up anything hand-written. How about photos of cacti and succulents you see on holiday? We hope to keep the magazine varied to show how Manchester has an active and interesting branch.

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Or e-mail to: [sjones@sjones41.freeserve.co.uk](mailto:sjones@sjones41.freeserve.co.uk)  
Preferably by 1st Sept for the September magazine.

## Gossip from the Show Bench



## The Rebutia Family

Having lost a lot of cacti (unnecessarily in my view) to overwatering, underwatering and keeping too cold over winter, I am keen to know what each plant is (at least the genus), and I'm therefore compiling quick reference lists to help me look after them. This is the only one I've completed so far, so I've attached it to see if anyone else finds it useful.

The main observation is the sheer bulk of 'old names' following the incorporation of the genera *Aylosteria*, *Mediolobivia*, *Rebutia*, *Sulcorebutia*, and *Weingartia* into the genus *Rebutia*, but you may still have plants labelled by the old names - we certainly have.

They are native to the eastern side of the Andes Mountains in Bolivia and Northern Argentina.

The genus *Rebutia* is named after P. Rebut, a French cactus dealer and expert from the 19th century.

Some facts about Rebutias:

- they readily flower and have relatively large daytime flowers.
- the flowers come from the lower part of the stem
- they need a gritty, well drained, slightly acidic cactus soil
- they need strong light but not direct sunlight
- they need regular watering in Summer, but the soil should be allowed to dry out between waterings
- they will take frost for short periods
- if grown from seed the seed should be less than 12 months old

Notes on the list:

All sizes are in inches