



EPIFLORA

Volume 12 No. 2

June 2003



WELLINGTON

EPIFLORA

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From the President

Dear fellow epiphyte growers

There are certainly indications that winter is on its way. The temperatures some nights have dropped towards freezing - but on other nights the minimum has been 14° C just outside our growing houses. Watering is something to be done very sparingly and with great care

With this copy of *Epiflora* you will find a copy of the duty roster for the coming twelve months. The roster lists the things that have to be done before, during and after the meeting. Everybody's name gets on the roster sooner or later - and all we ask is that you come on the day and do as much as you can. If you are not able to be at the meeting on "your day" please ring another member and arrange to "swap" with them. One of the great strengths of our society is that everyone does their bit to assist in the smooth running of things. Please put the day you are on duty on your calendar now.

While you have your pen in your hand add another date to your calendar. We hear from Auckland that the 2003 Epiphyllum and Hoya Convention will be held on the weekend 21st to 23rd November. It will start with a get-together on the Friday evening - and finish after lunch on the Sunday (so those travelling to Auckland will be able to head home in good time). The Auckland Society say the cost will be \$50 each which includes lunch and an evening barbeque on the Saturday and lunch on the Sunday - as well as your seat on the bus when everyone goes "tripping out West" on the Saturday.

In order to be able to make all this happen at such a good price Auckland need to know who will be attending by 1st September. Registration forms will be available shortly together with full details of the programme. Those intending to go should contact the Auckland Society¹ or one of our committee as soon as possible..

I look forward to seeing you at the next meeting when Graham Smith from Pukeiti Rhododendron Trust will be speaking and showing pictures. This will be an excellent afternoon - so come - and bring a friend as well..

Happy growing and kind regards

Roy Griffith

3rd June 2003

¹ The Secretary, PO Box 17-159, Greenlane, Auckland

The Programme for 2003

Meetings are at Johnsonville Union Church (Dr. Taylor Terrace) and start at 2.00 pm. Library books etc. are available at 1.30 pm.

Those on duty are responsible for preparing the room, assisting with tea and tidying the room at the end of the meeting and bringing a plant or other item for the raffle. If for any reason you are unable to do your allocated duty please arrange for someone else to do it.

June 14th	Visiting Speaker from Pukeiti Rhododendron Trust.
July 12th	“Midwinter” meeting - Talk on Aporophyllums
August 9th	Other People’s Pictures - slide presentation
September 13th	Rhipsalidopsis and Rhipsalis
October 11th	Workshop on Hoyas
November 8th	Field trip to the Wairarapa
November 21st to 23rd	Convention in Auckland
December 13th	AGM and Christmas Function

Enclosed with this issue of Epiflora..

You will find a copy of the balance sheet for the year 2002. This is an updated version of the one presented by Alice Hannam at our AGM - it includes all income and expenditure for December.

Beginning, Renewing or Moving a collection.

Anyone who has moved with a plant collection of any size can testify that it really is a moving experience in more ways than one. Alice and Rex Hannam have recently performed this feat - and Alice offered some thoughts at our March meeting. The reporter is Anne Goble..

Of course what you should do when starting a collection (of anything) and what you do do are two very different things.

You should approach the matter carefully and logically.

First, you have made the decision about what you are going to collect. You need to use the library and read up on the subject. You should also ask people who have collections of your subject choice.

There are several questions you need to ask yourself. Have you enough room to house it? Have you suitable warmth? What about heating? Can you install it? What about ventilation, light and a watering system? Have you got the time? Have you got a good source of supply, e.g. the Bruntons in Taranaki?

You need to think about pests - cats, slugs and snails. Alice and Rex found that snails came down from the roof to attack plants.

Don't take up too many hobbies. The Hannams now have three collections, epicacti, hoyas and schlumbergeras.

With epis, when plants become old and woody, cuttings should be taken and planted out in pumice and sharp sand or potting mix. Firstly, apply flowers of sulphur and dry the cuttings off. Then you can plant them. Some people like to root their epis in water. Epicacti do not like frost so you need to choose your spot if you intend planting them in the garden.

Crossing varieties can be very rewarding. If you do not want your seed pods, twist them off very carefully and you just might get another flower next season.

Alice began her collection with a pink epi received from a neighbour. She bought a white one, then got an apricot one. A friend then suggested she ask the Auckland club for the name of the first flower.

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Alice then joined the Auckland Society and got stuck in. She called in at a cactus show in Auckland and there was an epi stand there where she bought more. Then a glasshouse was needed to house them. They went down to the Bruntons place in Stratford and bought more. They turned the asparagus house into an epi house and then there were two. The rest is history. Another collector had been born.

Moving from Putaruru to Waikanae was a big exercise. Most of the collections were transported on a son-in-law's trailer and when they arrived in Waikanae there was nowhere to house them. A hail storm came and they got stones right through the schlumbergera pots.

There is a rule in the Kapiti region about permits for structures of 10 square metres and more so Rex built two 9.9 square metre sheds for the epis and hoyas. The hoyas had hung on the fence for two years. They did not like it, but they survived.

Pitaya - *Hylocereus undatus*.

Penny Luckens brought a Pitaya fruit to our March meeting - her curiosity was thoroughly aroused - so she went looking for information about it - this is what she found...

Those who were at the March meeting were shown a pitaya fruit available at several Wellington supermarkets. This was a fruit I had seen in Chengdu market (China) imported from Vietnam and sold at too high a price for my budget. Later I saw photographs of a white-fleshed similar fruit that had been at a Beijing banquet for a New Zealand group. From the first time I saw it I was sure it was a cactus fruit. It looked like a large version of an epiphyllum fruit, with scales not spines, and had a short flat green stem at its base. At that time I tried to find out what the plant was like but, except that it was known as "dragon fruit" I could find out no more.

Early in the year there was a letter in "Growing Today" that said these fruit were being grown commercially in the Bay of Plenty, but still there was no mention of what the plant actually was. After the March meeting Robyn sent me some information from "The Australian New Crops Newsletter" for January 1999 that she had found on the internet.²

Many cactus fruits are known as pitaya, pithaya or pitahaya. The red dragon fruit is

² At www.newcrops.uq.edu.au/newslett/ncn11163.htm

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Hylocereus undatus (*Cereus triangularis*). The French imported them into Vietnam over one hundred years ago and locals regard them as a native species now, although they must have originated from the Americas. Recently Israel has been developing drought resistant plants for the Negev Desert and has done research and development of pitaya and its relatives, including hybrids between different species.

I took a fruit along to my Social English group and asked for comments. Those from Malaysia and South China were familiar with the fruit either as “dragon fruit” or “dragon pearl fruit”. The general consensus was that the yellow dragon fruit had better flavour than the red variety according to those that had eaten both. Many were surprised at the deep red colour when the fruit was cut – “like beetroot” – was one of the comments. The taste was somewhat bland – but the colour was striking – the colour would be wonderful in ice-cream. The fruit has been used to combat anaemia.

The April meeting brought a copy of “Growing Today” (February 2003) with a four page article on Alan Hutchings of Te Puke and his commercial pitaya plantings, complete with photographs of the plants, flowers and fruits. He hand pollinates the flowers to ensure fruit set, starting at 6.00am as flowers open in the late afternoon and are dead by 7.00am the next morning. The plants are also known as Queen of the Night because of their large creamy fragrant flowers. His plants were grown from seven hundred cuttings of the best varieties he could find in Nicaragua in 1997. He will grow only enough to meet market demand and has no plans to sell propagating material. He has 1.2 hectares of greenhouses growing pitaya and also grows kiwanos on about 10 hectares. Both his red and yellow fruit are similar in size and shape.

The November 2002 – February 2003 “Epi and Hoya” (the Auckland Epi and Hoya Society journal) pictures red pitaya fruit and flowering plants on the cover. Inside are photographs of *Selenicereus megalanthus* at Landsend fruit (Auckland) and three varieties of *Hylocereus* fruits (one white and two red inside) and *S. megalanthus*.

The white fleshed one is like the photographs from the Beijing banquet. All four fruit bear marketing logos but there is no indication of where the photo was taken or by whom.

All this information not only solves my problem of what was the Latin name of the pitaya but also, now I have seen photos of the plant, I am fairly certain that this was the plant I saw growing along the tops of brick and concrete walls in southwest China in 1993. Vietnam is very close to southern Yunnan province in China.

Thank you Alice and Robyn for providing me with answers to my questions...

The Genus Schlumbergera.

Anne Goble talked at our May meeting. Here are the notes she prepared.

This is a talk by a beginner, I have been reading about the subject for a few weeks and have made these notes. I have found it a fascinating subject and I am hooked. All this information, and a lot more, is contained in publications in our very good library. Please do use it.

History

By 1818, *S. truncata* had been introduced to Europe from Brazil. Then, in 1836 or 7, high up in the Serra dos Orgaos, commonly known as the Organ Mountains, a Mr. Gardner found a bushy plant 1-3 feet high covered in large and pretty flowers, which he sent to England under the name *Cereus russelliana* in honour of his patron Lord Russell, the 6th Duke of Bedford. It was subsequently categorised as a Schlumbergera.

The genus Schlumbergera was dedicated to Frederic, a very well informed and zealous amateur and member of the distinguished French family, Schlumberger. He had a renowned collection of cacti at his chateau near Rouen. The main species of Schlumbergera are - *S. truncata*, *S. russelliana*, *S. opuntioides*, *S. orssichiana*, *S. candida*, and *S. microsphaerica*.

In the 1840s, there was at Rollisson's nursery in England a man by the name of Wilbraham Buckley, a foremost breeder of the time. He raised three sister seedlings from the same cross of *S. russelliana* and *S. truncata*, as well as many attractive *S. truncata* or crab cactus cultivars. The three seedlings were given the names *cupreum*, *rollissonii* and *buckleyi*. *Cupreum* disappeared but the other two were an immediate commercial success. *Rollissonii* was known as Rubrum and *buckleyi* as Superbum. The *buckleyi* cross became the common Christmas Cactus. Its joints are flat and thin, somewhat elongated and narrow. It is now almost extinct in habitat.

Reading what Mr Buckley described, he seems to have thought *buckleyi* had the nicer flower but that *rollissonii* may have been larger. He notes that *buckleyi* has the colours of both parents beautifully blended. If *buckleyi* was the better plant this could explain why it became our common Christmas Cactus and *rollissonii* has become very rare. A *S. buckleyi* cross has crenate segments and more or less regular pendant flowers.

In those days, Schlumbergeras were called Epiphyllum, a name we now use for the wild species of orchid cacti which were then known as Phyllocactus. Schlumbergera is the genus reinstated by Britton and Rose to accommodate the species *gaertneri* and *russelliana*, neither of which has the stamen tube membrane nor are they zygomorphic. The populations of Schlumbergera in the wild appear to be maintained mainly by seed production. Asexual means



Schlumbergera opuntioides

This species comes from a mountainous region of Brazil where it grows at an altitude of 2400m. In winter the temperature can fall below -10°C. Some say that a good method of cultivation is to graft it on *Selenicereus* stock, even then it will not do well in hot and dry conditions.

of propagation such as the rooting of dropped segments may be of some importance, but the scale is not known. Reproduction by seed is quite slow. Seed takes around 13 months to ripen in the fruit after pollination in the wild and the seedlings can take 5 - 7 years before flowering. There is so much we could learn by the study of plants in their natural wild environment.

All members of the genus are hermaphrodite, male and female sexual organs being present in the same flower. The pollen is shed at the same time as the stigma is receptive and, without the self-incompatibility mechanism to prevent it, self-fertilisation would occur, resulting in in-breeding and the reduction of the genetic variation.

The two parent species, from which *S. truncata* and *S. russelliana* came, are found in the same highly scenic region of Brazil in the mountains to the north of Rio de Janeiro. *S. truncata* is known in Brazil as Flor-de-Maio because it blooms in May in that country. In their natural wild habitat, *S. truncata* usually flowers in May and *S. russelliana* in July. It was not until 1953 that they were again placed together in the same genus.

S.Truncata

is found in the lower altitudes and is adapted to a more humid, warmer atmosphere, growing on the trunks and branches of large trees, and near waterfalls, together with other epiphytes in pockets of humus, and occasionally growing on rocks. The habitat is from time to time covered in cloud and water drops from trees. Occasional droughts occur without damaging the plants. The colder nights at the higher altitudes where the plants are found also suits the plants, which are found almost down to the coastal biological reserves, e.g. Poco das Antas, c. 200 m. It was one of the first of the *Schlumbergera* species to be described and has been the most important species in the development of cultivated forms.

They consist of flattened joints which branch dichotomously. That means that one joint divides into two, then the two new joints divide into two, and so on. These greenish flattened

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joints average about 2 inches, i.e. 5 cm. in length and up to 1 inch in width, with 2-4 acute teeth along each side. The flowers appear, usually singly, at the tip of one of these flattened joints and are up to 3 inches long. The petals tend to fold back so that the style and the stamens are clearly visible.

It is the most widely grown species of the genus and the one which is the most widespread in the wild. It has the greatest diversity in vegetative appearance and flower colour. *S. truncata* comes in shades of red, orange, pink, purple and whites. The salmon or orange coloured plants flower later than the pink varieties. Nectar is freely produced from the nectar chamber at the base of the floral tube in Schlumbergeras.

S. truncata has a more upright growth and the stem segments are much larger, than *russelliana* and they are toothed rather than crenate. The flowers are zygomorphic and show typical adaptation for humming bird pollination. Its upright growing habit, free flowering nature and general ease of cultivation has made it a considerable commercial success throughout the world, both as a species in its own right and its hybrids with *S. russelliana*.

The flowers take up a horizontal position to allow the hummingbirds access to flowers for pollination. The horizontal position is what causes the flowers to become zygomorphic. A zygomorphic flower is divisible into two equal parts in one plane only. The fruit is a more or less turban-shaped berry, it is rosy, 12mm long and 10 mm wide at its widest. The teeth on the segment joints is a common adaptation to a rainy climate, allowing the water to run off freely. The species is rare in cultivation.

Defining the limits of "true" *S. truncata* is made difficult because the wild populations may have been affected by cross-pollination. This could explain the colour range of pinks and purples. Adda Abendroth has passed on a good deal of circumstantial evidence that hybridisation with other groups does occur in the wild. Adda is a fascinating woman who lives in Teresopolis, Brazil. She is a Germanborn, diligent collector of bromeliads and epiphytic cacti. Every plant in her garden collected in the wild bears a tag, referring to an index she keeps of localities and subsequent observations.

S. russelliana, on the other hand, grows further up the mountains between 1350 and 2100 m, where the climate is colder and drier. It, also, grows mostly as an epiphyte. It can tolerate an occasional slight frost in winter. The common plant undoubtedly gets much of its tolerance from this female parent but it hates summer heat and should be kept outside in a cool, shady spot until March. With care, it is a vigorous plant and will flower well. In the wild, reds and oranges predominate because the pollinators are more attracted to these colours, but pinks, purples and whites are also found. Much of their original habitat has been destroyed since the original collections were made and Horobin has tried to build up a collection representing as much as possible of the remaining natural variation, both for study and further breeding work.

Seed dispersal

Schlumbergera berries don't split open when ripe. Birds will tear the berries off and squeeze out the juice. They eat seeds and pulp and the seeds may be resistant to digestion. The birds will rub off on nearby branches any seed that has adhered to their beaks and this may be where they could germinate. Ripe red berries would certainly attract birds. The higher altitude species and *S. orssichiana* have green to brownish berries when ripe, but these are presumably still attractive to birds.

Seed storage

The great Dolly Kolli has found that Schlumbergera seed of random vintages, stored up to 11 years in the refrigerator, have a germination rate of 72% to a full 100%, even after the refrigeration had failed for a brief period because of a heat wave. The seeds can be started on damp sterile sand and held under glass. It's no use keeping the seed somewhere in the house in paper bags. It needs to be refrigerated if it is to be kept for any period of time. Horobin thinks it could be best to reduce the water content of the seed by using silica gel.

Clonal multiplication

Some propagation in the wild may occur by non-sexual means or clonal multiplication. All species of Schlumbergera are prone to shedding stem segments at intervals, often as a result of environmental stress.

If the segments fall on a suitable substrata, they can root and develop rapidly into new individual plants. These are genetically identical with the parent plant. *S. russelliana* is particularly prone to dropping stem segments in European culture, particularly after rapid temperature changes. Segments will root down into a suitable medium and a new plant can arise. You could arrange this from a plant into another beside it by layering a branch. This happens frequently in a crowded greenhouse collection and this leap-frog style of growth presumably allows a vigorous clone to spread in the wild.

Most of the newer varieties have been improvements on the existing colours. In spite of the destruction to the habitat, there is still considerable variation in the wild available for breeding purposes.

S. Opuntioides

was described in 1905 by Albert Lofgren, head of the botany department of the Rio de Janeiro Botanical Garden, in collaboration with Per Dusen who had discovered it. It is an epiphytic freely branching shrub, forming clumps up to 1.2 m tall. The stem segments are up to 9mm thick and they become cylindrical and woody with age. The numerous areolae become woolly and stiffly spiny with age. The flowers are zygomorphic with a tube 30-40 mm long. It is a much-branched miniature plant, with small Opuntia-like segments, dark green and fleshy. The flowers are purple and lilac.

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Opuntioides will cross freely with the flat-stemmed *S. truncata* and *S. buckleyi* and Horobin has crossed them with *S. russelliana*. It is thought that *S. opuntioides* and *S. microspherica* evolved from flat-stemmed ancestors. They are of limited value for breeding, difficult to grow on their own roots and are best grafted. Their most useful feature may be the cold tolerance of forms from higher altitudes (2,000-2,800 m), where night temperatures can drop as low as -10 degrees C. When David Hunt of Kew Gardens was collecting on Mt. Itatiaia in 1966, he found *S. microsphaerica* growing at 2,350 metres. He also found hippeastrums growing wild up there, apparently unworried by the -4 degree C frost. They were up to 40 cm tall.

Modern hybrids

In the 19th century, *S. truncata* was one of the favourite plants for the conservatory and as a table decoration but few of the many varieties which were grown at that time survive today. Most of the old cultivars from the 19th century disappeared, partly because of a decline in interest but also due to the effect of the two world wars.

There is enormous choice of varieties available nowadays. It's a problem deciding which varieties to grow and it is always worthwhile seeking advice. Some varieties will do well for some people but not for others. Sometimes, it is not the ones that do well that are the most interesting from other aspects. One has to try and see, because nobody else can duplicate your growing conditions exactly.

There's more than enough choice to keep everybody happy. What really matters is that the plants do well and make their owners happy. This is evolution in progress - they are the ones to survive and poor performers perish.

There are some important advantages in growing Schlumbergeras. For those of you who are short of space, they take up much less room than the hybrid epis. They make wonderful houseplants and you can easily bring them inside when the weather gets cold.

Schlumbergera prefer 75-80% shade throughout the year. No direct mid-day sun. Too much light can cause stunted growth and red or yellowed foliage. If your plants are kept inside, an east or west facing windowsill will suit them. They tolerate very low light conditions but flower production may not be good under extreme low light.

Cynanchum marnierianum

This plant comes from Madagascar. It is from the same family as are hoyas. It has no foliage, but produces flowers of striking green with long twisted petals. It is, in fact, a very distant relative of *Asclepias physocarpa* better known as "the swan plant" though the reasons for its lack of conventional foliage are entirely different.



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If you select your varieties, there's no reason you can't have colour when the epis are not in flower. We tend to keep them indoors while in flower but find they are much healthier when they spend most of the year outside. They must be one of the most difficult plants to market commercially, because they need to be in bloom to attract shoppers. Then they almost always show their resentment of transition from the controlled atmosphere of their nursery to a shelf in a garden centre, then on to still another environment, by dropping their buds. Cold draughts should be avoided at all times.

If you want to increase your Schlumbergera collection, the time to go looking is very near Mother's Day. If you haven't been tempted before, try some. They are easy to grow provided they have a good open mix and are not over-watered.

Breeding

Breeding efforts within plant groups tend to go in cycles, stimulated by new discoveries and new possibilities. Although Schlumbergera were popular in Victorian times, the genus fell into neglect early last century. Within the past 25 years, there has been a revival, partly driven by access to new material. Even thirty years ago, a good white variety was hard to get. Now there is a good choice. Germany, Denmark and the UK have produced well-known breeders. Madsens of Denmark, have excellent facilities and their aim is to produce *S. truncata* type cultivars, strong growing, upright and in an improved colour range and they have tried mutation breeding techniques.

The real breakthrough in hybridising seems to have come from B L Cobia back in 1982 with a yellow flowered *S. truncata* cultivar, "Gold Charm". He grew more than 50,000 seedlings to get this. Since yellow is not found in the wild, "Gold Charm" was a tremendous breakthrough. Like the white cultivars, it does tend to develop a magenta coloration when the flowers develop under cool conditions. It was originally developed from an orange-flowered cultivar, the colour of which was apparently made up of red and yellow pigments in close linkage, which was a very weak grower.

To improve the vigour, it was crossed with a good white breeding line and eventually the yellow colour was released in the sterile triploid "Gold Charm". This means it has three sets of chromosomes which made further breeding from "Gold Charm" difficult, thereby giving Cobia a big lead in this colour break.

Apparently, it is quite easy to produce good *S. buckleyi* forms using the Christmas Cactus itself as the female parent and selecting out the required vegetative types from the segregated seedlings. If you do have white or yellow flowering plants, they should be kept in temperatures over 12 degrees centigrade to keep their proper colour. But be careful. These plants may fail to bloom if kept too warm.

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The Cobia hybrids are recognised by their large flowers and broad width and the length of the phylloclades (branches). They are rather upright in habit. Cobia also produce hoyas and rhipsalidopsis.

One of the problems in breeding these plants is the long time-scale involved. The plants are generally self-sterile and, after pollination, the fruit takes around 12 months to ripen. The seed then needs to be sown as soon as possible in warm conditions of at least 20 degrees celsius. Germination takes about 3 weeks. While they can be grown from seed, they will not usually breed true. Typically for the cactus family, they grow very slowly the first year but then growth is more rapid. The seedlings take 3 to 5 years to produce their first flower. This makes breeding extremely slow.

Often flowers can be obtained quicker if cuttings are taken from the seedling. These seem to produce the mature flowering stems earlier. Grafting on to a vigorous cactus stock can help speed the growth. Or you can tip graft a small rapidly growing piece on to the growing point of the stock. This can be quite effective. Schlumbergeras are very easy to graft.

Some other hybrids

S. orssichiana is one of the most remarkable discoveries of recent years. It was discovered by Beatrix Orssich in 1974 near Parati in the Serra do Mar, to the south of Rio de Janeiro in Brazil. It has very large flowers - about 9 cm across, 5 cm long, and a very short flower tube. *S. truncata* and *S. russelliana* produce only one flower to the areola, but this one produces 2 or 3 an areola and it can flower 3 times a year. The stem segments are even bigger than those of the crab cactus, which it closely resembles. It has leaf-like flattened joints. An aerola is the cushion-like growing point.

Hybridisation

The first hybridising with this new discovery was by A J S McMillan in the UK, with *S. truncata* 'Spectabile' as the pollen parent. Beatrix Orssich called her hybrids Queen because of the enormous flowers. The first variety from this cross was *S. x reginae* 'Bristol Queen'. The flowers were up to 9 cm across and 11 cm long. Much bigger than *S. buckleyi*. The petals are white shading to fuschia purple. Many other crosses have since been made.

Hybridisation within the species is a fact of life, both in the wild and by man's efforts in cultivation. Without it, there wouldn't be an improvement or adaptations to a changing environment. We should remember that the plants collected in the wild are often not ideally adapted for the conditions we grow them in. It's surprising that so many species do as well as they do, but plants do put up with a lot in nature. Weather changes are frequent in many

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regions and plants, unlike animals, cannot lift up their roots and find shelter until the worst is passed. They have to be able to survive.

Hybridisation is a cross between two individuals and there are many techniques available now that make crosses possible that could not be achieved by simple pollination of one species with another. Hybrids may resemble either or both parents to varying degrees. If the habitat collected plants are not ideally suited to the growing conditions we can offer, we can either change the environment which is often expensive, or we can hybridise and select better performing forms.

It's human nature to be looking for something better than what is available. The desire for more attractive and beautiful plants is a powerful driving force. Many plants are so attractive when in full bloom and so easy to grow, they do encourage people to become interested in the more difficult hybrids and maybe even rarer species. Half the fun of hybridisation is that one does not really know what one will finish up with. With experience and knowledge it is possible to predict to some extent and determine the best parents to use but the thrill of the first flower on the first seedling of a batch is something unique.

Hybridisation does have a lot of other benefits. One of the best ways of cleaning up virus-infected plants is to grow new plants from seed. To do this with a self-incompatible species which will not set seed with its own pollen, we need more than one clone. With the widely distributed but virus-infected *S. orssichiana* clone, other clones are needed to enable seed to be produced.

Cultivation

Schlumbergeras are very long lived, growing into enormous plants over years. Be frugal with fertilisers and water carefully. Overwatering will cause plants to collapse and too much fertiliser can be detrimental.

All species are easily propagated by cuttings, at any time, but best in spring. If possible, keep the parent plant well-watered for several days before removing the cutting material. Small cuttings of 2 or 3 segments are best. Place them in a damp sandy mix, half to three quarters of the depth of the lowest segment, in a warm humid place to root. It is preferable, particularly with the pendant types, to place 2 or 3 cuttings evenly around the edge of the pot to get a better shaped plant. It will take a month or two.

Removing the cuttings by twisting may give better results than by cutting and it is certainly better than risking the spread of a virus by an unsterilised knife blade. As soon as new growth appears, plants can be potted on to a 10 cm or 12cm container. A sprinkle of Diazinon prills will help combat mealy bug.

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Growing mix

In their natural habitat, all species of *Schlumbergera* grow on mossy tree branches or in crevices between rocks, anywhere they are able to take advantage of small pockets of decayed leaves, moss or other vegetation. As they are mostly epiphytic in nature, they prefer a compost with lots of organic matter like peat or leaf mould. Ideally, this should take up at least one third of the volume, the rest being equal parts of sharp sand and good loam. We just use a good potting mix.

Water moderately throughout the year. The stem-segments are quite resistant to drought and transpiration from them is slow. Because of this, damage to the roots or the loss of the roots will not show for days or even weeks after the damage has been done. The soil in the pots dries out mainly by evaporation rather than by what the plant uses. This means that extra care is needed in watering because the roots are also damaged by too long without water. Filtered rain water is the best provided it is clean and free from disease organisms. Some people swear the value of placing old tea leaves around the plants. They are certainly beneficial. Keep the plants reasonably warm while the buds are developing and avoid sharp temperature changes and drafts. This can result in bud drop. A minimum temperature of 15 degrees celsius is best during this time for both *S. orssichiana* and *S. buckleyi*.

Repotting

Don't overpot because the compost will sour very quickly. Also, ensure the drainage is good. The modern cultivars do better if tightly potted. If you can get the half pots, you will find that these are better than the deep ones. There are pros and cons for clay pots or plastic pots and one could argue in favour of either.

If the foliage shrivels it may be that the plant has lost its roots. Then, the best thing to do, is to treat the plant as a cutting. Knock off all the loose soil and cut back any roots to the base. Cut back into the stem to remove any rot which might be present. Let the plant dry off for a few days, then treat it as you would the segments. It should eventually take root and recover but it will take a lot longer than with your usual 2 or 3 segment cuttings.

Pests and diseases

are few, but slugs and snails find *Schlumbergeras* a tasty morsel. They are safer hanging in the trees during summer and nothing can be more natural for an epiphytic plant. Everyone has their favourite methods of ridding their plants of unwanted attention from certain insects. Those yellow stick traps are great. By the way, did you know that scale insects have no males?

If you have a virus-infected plant, try growing fresh new plants from seed. Plants grown from seed are almost always virus-free, even when the parent plant is infected. Virus infections are spread very easily by aphids. It is very difficult to control every single aphid within a greenhouse so it is best to remove or destroy any virus infected plants.

Grafting

There seem to be two good plants upon which to graft Schlumbergeras and similar plants. One is the common *S. buckleyi* which is a vigorous long lived plant. The other is *Hylocereus* which apparently grows very well if fast growth and large plants are required.

A vigorous hybrid epicactus also works well because it does not become as dormant during winter as the most popular grafting plant of *Selenicereus spinulosus*, a vigorous cactus stock. If any of you want to know more about grafting, I can recommend McMillan and Horobin's book "Christmas Cacti (Schlumbergera)" which the library holds. There's so much pleasant reading in our library. Have a browse through it now.

Now is the time.....

Things are a bit crazy right now but this is what should be going on!

Epicacti - *it is still "work time" prune and repot if necessary*

Hoyas - *best not to water unless the plants look really dry and then only give a small amount of water on a fine day. Some days are still warm so keep checking for mealy bugs and other pests.*

Schlumbergeras - *enjoy the flowers and water sparingly*

Rhipsalis - *water very sparingly.*

Aporophyllums - *water infrequently. If you have not done so prune lightly and repot (with great care!)*

Ceropegias - *lay off the water unless the plant looks very dehydrated. Then give only a small amount of water in the morning on a fine day. Keep checking for pests!*

Odd Cuttings and Seeds

Know the enemy - mealybugs...

There are basically three types of mealybugs that can infest indoor or greenhouse plants: The citrus mealybug (*Planococcus citri*), the Longtailed mealybug (*Pseudococcus longispinus*), and the Root mealybug (*Rhizoecus falcifer*). The citrus mealybug is by far the most common.

The time from egg to mature adult can vary from 30 to 70 days, depending primarily on temperature. Mature females lay up to 600 eggs and live for several weeks. When

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using an insecticide the effective period of the chemical, or multiple applications of the chemical, should persist for at least 30 days. This will ensure all eggs have hatched and resulting nymphs have been killed.

Stove Plants

During her talk on Schlumbergeras Anne commented that she had seen several references to "stove plants" but was not sure what the term meant.

A bit of digging reveals this is an old term - from the time when glasshouses were heated by stoves - it can describe any **plant** from a warm climate that must be grown in a greenhouse in order for it to live. There is a quote on the website of the American Horticultural Society that illustrates this...

".....Hoyas appear to have been among the first popular house plants in European and American homes. Indeed, one nurseryman told me the reason he didn't have any for sale was because they were so common that everyone who wanted one had already been given one by a grandmother or aunt. He was talking about *Hoya carnos*, which was already a well-known "stove plant" (a term from the days when greenhouses were heated by stoves) when the younger Linnaeus published it as *Asclepias carnos* in 1781.

Craigmyle Epiphyllums

....have a new address and phone number. Yvonne and Andrew are now at 36 Manutahi Road, Bell Block, RD 2, New Plymouth. And their new phone number is (06) 7553328.

Grey-Davis Epiphyllums

A new website has just gone on-line on the Cactus-Mall for Gray/Davis Epiphyllums (California). You will find it at: <http://www.graydavisepies.com> This is a large extensively illustrated catalogue with some 300 photographs. You can't order any of the plants of course (unless you want to pay a fortune to MAF) but you can enjoy the pictures

New supplies of fertiliser

....Rex has organised new supplies of slow-release fertiliser. This is available for sale - together with pots of various sizes etc. etc. Don't forget - if you think that there is some other product the society should start buying in bulk -talk to Rex about it..

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Back Numbers of “Epiflora”

The first edition of *Epiflora* appeared in March 1992. We have limited stocks of back-numbers for most issues from Volume 2 - issue number 1 (March 1993) onwards. Prices are 50c per copy plus postage (if applicable) - contact the Editor ..

Future Publication Dates..

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Comments and contributions are most welcome. The society aims to encourage discussion and debate; opinions expressed are those of the authors and do not necessarily represent those of the society. It is the policy of the society to publish corrections of fact but not to comment on matters of opinion expressed in other publications All material in Epiflora may be reprinted by non-profit organisations provided that proper credit is given to WEHS, Epiflora and the author.

Please address correspondence to:

249 Te Moana Road,

WAIKANAE.

Or: griffith@globe.co.nz

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the 1990s, the number of people in the UK who are aged 65 and over has increased from 10.5 million to 13.5 million (15.5% of the population).

There is a growing awareness of the need to address the needs of older people, and the Government has set out a strategy for the 21st century in the White Paper on *Ageing Better: The Government's Strategy for Older People* (Department of Health 1999). This paper sets out the Government's strategy for older people, and identifies the key areas for action.

The White Paper sets out a number of key areas for action, and identifies the key areas for action in the following areas:

• *Health and social care*: to ensure that older people have access to the services they need to live well and to die with dignity.

• *Income and housing*: to ensure that older people have the resources they need to live well and to die with dignity.

• *Transport and accessibility*: to ensure that older people have access to the services they need to live well and to die with dignity.

• *Participation and citizenship*: to ensure that older people have the opportunity to participate in the life of their communities and to exercise their citizenship.

• *Equality and diversity*: to ensure that older people from all backgrounds and ethnicities have the opportunity to live well and to die with dignity.

• *Research and innovation*: to ensure that the needs of older people are met through research and innovation.

• *Partnership and co-operation*: to ensure that the needs of older people are met through partnership and co-operation.

• *Local authorities*: to ensure that local authorities have the resources they need to meet the needs of older people.

• *Voluntary organisations*: to ensure that voluntary organisations have the resources they need to meet the needs of older people.

• *Private and voluntary providers*: to ensure that private and voluntary providers have the resources they need to meet the needs of older people.

• *Health and social care providers*: to ensure that health and social care providers have the resources they need to meet the needs of older people.

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