

# CAPE NEWS

6

Autumn 2005



## Editorial

As result of pressures over Christmastide this Newsletter covers both the 2005 year end Club Meeting and the AGM. The next Cape News can be expected by the end of June and will cover the research done on the effectiveness of the beneficial fungus and some more on the Clivia Conference held at Huntington in California over the Easter Weekend. Our own John Winter was invited to speak there on Variations in Clivia miniata in the Habitat and he will tell us all more about that meeting.



Photo: Tom Wells

John Winter with other visitors at Jim Comstock's shadehouse

## What a meeting!!

On Saturday morning the 20<sup>th</sup> November 2004 a large crowd of Clivia enthusiasts gathered at the Gold Fields Centre at Kirstenbosch for the last meeting of 2005.

The Chairman, John Winter, called for a minute of silence in remembrance of Oom Gert Wiese, a stalwart founder and honorary life member of our Club, who passed away at the age of 83 years on the previous Tuesday morning. Coen Calitz read a tribute to his contributions to the Clivia fraternity.

John then specifically welcomed Margherita Blaser, who recently celebrated her 100<sup>th</sup> birthday, and thanked her for attending the meeting. He made mention of

the "Margherita Blaser Centenary Floating Trophy" that had been instituted in her honour and that she had decided that it should be awarded in the Class for Peach Miniatas.

Cape News was being published only electronically and it was agreed to investigate the best way of making it available to all members. *(We have investigated the printing costs as well as the administrative, storage and postage labour and costs of making the Cape Clivia News available in hard copy. This is clearly prohibitively expensive and not worth the effort. We can however, compile a CD of each year's 4 or 5 editions and make this available. But the best advice we can give if you do not have the equipment or the skills to read Cape News, is to ask a friend or better still, ask one of your young grandchildren! – Eds)*

Next up was the exciting event of presenting Toy Jennings, aka "Mama Clivia", with honorary life membership to the Cape Clivia Club.

Coen Calitz read the Citation as follows:

## TOYJENNINGS

I am honoured to introduce Toy Jennings to you:

In true African tradition we can call Toy Jennings "Mama Clivia". Over the whole lifetime of the formal organisations of Clivia she has fulfilled the mother role. In the Cape Clivia Club she has for many years been the cordial caring one who welcomes new members, who shares seed, plants and advice. She contributes to the excellent relations between the sometimes-hardheaded Clivia fanatics. At every show she has been the one who showed visitors how to germinate seeds, how to treat plants and what the characteristics of good plants are. She is truly the provident Clivia mother.

Naturally she also nursed and pampered her own Clivia plants. Besides many other prizes over the years, she had the great honour of Best on Show for the first inaugural Clivia Flower Show held in Pretoria on 17/9/1994. This

was for the highly sought after Ella van Zijl. In 1996 she again bested all the other rapidly improving Clivia with an outstanding yellow. At the Cape Shows she received many prizes in various classes. This shows her sustained love, commitment, knowledge and effective cultivation when the rest of us were still in doubt about the most basic things about Clivia.

For personal details I refer you to the "Personality Parade" in the Newsletter of the Clivia Club, volume 5, no. 3 of September 1996. This can be summarized as follows:

Toy van den Berg was born in 1928 and grew up on a farm near Hopetown in the Northern Cape. After her schooling in Douglas she worked in Pretoria for several Government departments, eventually for 21 years at the SABS. In 1953 she married Peter, who faithfully supported her in all her Clivia passions. They lived in Pretoria and later in Fish Hoek, where he tragically passed away in 1999. Her mother-in-law, Edna Jennings who shared her love of plants and gardening, introduced her to Clivia. Once the bug had bitten, she rapidly acquired a large and varied collection of Clivia from local and overseas growers, as well as from her knowledgeable and selective breeding.

Toy has been involved in the formal structures of the Clivia community since 1994, when she was co-opted to the Clivia Committee at the first AGM, together with James Abel (chairman), Nick Primich (founder) and Wessel Lötter. She was immediately appointed as the Secretary for Public Relations and Membership. She fulfilled these functions admirably until her departure for the greener pastures of the Cape. Here she was immediately (on 22 January 1997) co-opted into the committee of the fledgling Western Province Clivia Interest Group, which soon became the thriving Cape Clivia Club. Since then she has served on the committee and has been intensely concerned with and involved in Club affairs, especially the membership and Public Relations. In both Pretoria and the Cape she extremely successfully advanced the cause of Clivia. Countless letters from all over the world was addressed to her. Some of these were taken up into the Newsletters. I am sure that just about everyone in the Clivia world knows and love her. For example, in Australia several special plants were named for Toy and her family, Peter, Wendy and Joan. A well deserved honour.

Toy Jennings is also synonymous with the very unusual Ella van Zijl Clivia. This belonged to her friend and neighbour Ella van Zijl, where the two plants grew on the pavement under a large plane tree. When Ella had to leave her home for a care institution, Toy as one would expect, aided and assisted her. The plants of which the origin is unknown thus came into her possession. Apparently the salient characteristics are not transmitted through the seeds, but only through the

suckers. Toy generously made so many of these available and in many cases gave them away, that they are spread over the whole world. All are tangible links with an exceptional Clivia "grand dame". The other plant, for which she has become famous, is the "Bliksem", apparently an exclamation of surprise and maybe a tinge of jealousy at first sight by a Club member. You only have to leaf through the Newsletters and Yearbooks to find further examples of her exceptional plants. Here, too, she sets an example and standard to which younger and novice growers can aspire.

It is with pleasure that the undersigned, supported by the whole committee, propose that Honorary Life Membership of the Cape Clivia Club be bestowed upon Toy Jennings, in recognition of her sustained exemplary service and contribution to the people and cause of the clivia community. In this we also honour the contribution and support of her daughter, Joan, her late daughter Wendy and especially her late husband, Peter.



Photo: Johan Schoombie

Toy Jennings saam met Coen Calitz na die Toekenning

Toy, we salute you.

**C**laude Felbert then showed the meeting photos of the winners taken at our show in September. While doing so, he passed on several tips to photographers. Claude also related his experiences a couple of weeks earlier photographing *Clivia mirabilis* in Oorlogskloof. The temperature at the rim of the canyon was 43°C. It was a lot hotter in the canyon itself, so much so that Claude, carrying heavy photographic equipment, was seriously concerned whether he would be able to get out! He showed us some very good photos of the growing and flowering conditions of *mirabilis*.

After the meeting a number of members enjoyed the traditional end of year braai at the Stone Cottages at Kirstenbosch.



*C. mirabilis* growing and flowering in a crack in a rock.



Photo Claude Felbert



Photo Mick Dower

## ANNUAL GENERAL MEETING

The Annual General Meeting was held at the Durbanville Library on 12 March 2005 with over 80 members present.

A minute of silence was held in memory of Tom Haylett, Fred Gibello and Gert Wiese, who had died during the year. Fred and Gert were founder members of our Club, Fred was an Honorary Life Member of the Clivia Society and Gert an Honorary Life Member of our Club.

The Chairman, John Winter read his **Chairman's Report** on another highly successful year.

The Treasurer, Ian Brown, presented the **Financial Statements**, audited by Mr H A Farrow, to whom a special vote of thanks was passed. The surplus for the year was over R41 000, bringing the accumulated surplus to over R86 000.

It was unanimously resolved to contribute a further R25 000 (total R45000) towards the studies into the DNA of Clivia genus being carried out by the Research Centre of SANBI at Kirstenbosch, and to set aside R10 000 towards the cost of producing a supplementary Colour Chart, which would include, in particular, the peach range.

The present **Committee** was re-elected en bloc being:

John Winter, Marleen Bilas, Ian Brown, Coen Calitz, Diné Calitz, Roy Danford, Mick Dower, Claude Felbert, Toy Jennings, Jim Holmes, Johann Schoombee, John van der Linde, Gerrit van Wyk, Felicity Weeden. Caroline Phipps (Joy Woodward – secretary)

**Portfolios** – The following committee members will assume responsibility for the following portfolios and call for assistance wherever necessary:

Finance and Accounts	Ian Brown
Membership	Toy Jennings
Show Manager	Johan Schoombee
Other Shows & Displays	John Winter
Co-ordinating Meetings	John van der Linde
Workshops	Gerrit van Wyk (Northern Suburbs) Mick Dower (Southern Suburbs)
Publicity	Marleen Bilas
Liaison Clivia Society	Coen Calitz
Posters and Photography	Claude Felbert
Publications	Mick Dower
Sale of Seed & Seedlings	Mick Dower
Bulk buying	Mick Dower
Overberg Interest Group	Felicity Weeden

### Clivia Society

- Annual General Meeting : It was noted that the AGM of the Clivia Society will be held on 21 May 2005 in Pretoria.
- Club Representatives – Coen Calitz, Claude Felbert and Felicity Weeden were nominated to represent the Club. Johan Schoombee, Toy Jennings and Gerrit van Wyk were nominated as alternates.
- John van der Linde reported on Society matters.
- Representatives on Sub-Committees – the following were nominated:  
Public Relations: no nominations were received  
Yearbook: John van der Linde (Editor),  
Claude Felbert  
News Letter Liasion Coen Calitz  
Registrar of the Clivia Genus Joan Sadie  
Website Riel Lötter, Johan Schoombee  
Research Mick Dower  
Standards & Judging  
Johan Schoombee, Mick Dower
- Coen Calitz reported on the 4<sup>th</sup> International Clivia Conference planned to take place on 5 September 2006 in Pretoria.

## Brief reports

Sales of Seed and Seedlings:

It was pointed out again that every member of the Club is encouraged to sell seed and seedlings through the Club. The only requirements are that the parentage must be given and guaranteed and that 15% of the proceeds goes to the Club.

## General

Bulk Products – Mick reported on the considerable saving on prices of pots if bought in bulk and asked the members present to indicate how many they would purchase. The response was not sufficient to warrant bulk purchasing, but members in both the Northern and Southern Suburbs have volunteered to store bulk products for the Club and the feasibility of this facility will be investigated further.

The annual show will be held at the Bellville Civic Hall on 17 & 18 September 2005. Johan Schoombee will be the Show Chairman. The Show Rules and Schedule have been revised in consultation with exhibitors and the judges.

Refreshments were served followed by an excellent illustrated talk by Rudo Lötter on Breeding Interspecific Clivia and Breeding for colour.

## RUDO'S TALK ON BREEDING INTERSPECIFICS

This is the art of breeding by crossing the six clivia species and involves basic genetics.

### Parent generation.

**Miniata** are the most attractive and they have many mutations and variations. The other, pendulous, species have less genetic variation. The yellow mutation in miniata arises from a block in the anthocyanin producing pathway. Peaches are the same. The F1 generation is orange split for that mutation and in the F2 25% of the mutation is recovered.



Bronze Greenboy



Laurens Riike's Multipetal Bicolour

'Bronze Greenboy' has excessive green chlorophyll. Its inheritance is maternal and is essential for the development of such new colours as lime and bronze. 'Tango' is a mutation in the pattern genes, when the pigment is not evenly distributed. Bicolours and picotees are a mutation in the pattern genes which alter the distribution of pigment. Multipetals with more than 6 petals is a trait enhanced by selective breeding. Compact broad leaf daruma as well as variegated leaves (including 'Light of Buddha') and dwarfs are all genetically inheritable.

**Nobilis** has quite a bit of colour variation.

It is also hardy and can be used to create better red flowers.

It also brings about the difference in colour between the inside and outside of the flowers in the F2 generation.

It has the most flowers on the umbel and is resistant to amaryllis worm.

However, it is slow growing and offsets poorly.

### Some Interspecifics Bred by Rudo



Dainty



Jealousy

All these traits can be used in interspecific breeding.

**Gardenii** is a good parent because they have a lot of colour variation and are attractive, fast growing and offset well. Their hybrids are attractive with recurved flowers. They flower in early winter and can create winter flowering hybrids.

**Caulescens** have quite a bit of variation and are fast growing. They are the best parent to use with *miniata* because can flower in three years and also twice a year. *Caulescens* also brings green tips to the petals.

**Robusta.** The F1 and F2 hybrids with *miniata* are different from *gardenii* hybrids. They have long (1.5m) broad leaves and grow in swampy conditions.

**Mirabilis** grow in semi desert conditions, are drought resistant and tolerate full sun.

### Creating the F1 Generation.

Before starting set down you goals, what you want to achieve. Be prepared for the project to take many years to achieve your goal. Choose the best parents with the best umbels and flowers to achieve your goals.

If you want to create a small pot plant with pendular flowers, choose a small compact *miniata* and pollinate it with a *nobilis*, selecting the best quality parents. It is unlikely that these parents will flower at the same time, so save pollen in capsules in the fridge or deep freeze – it must be stored dry. If it is stored properly, it can remain viable for up to 5 years.

You must isolate the mother plant to avoid foreign pollen and emasculate it by removing the anthers before the pollen ripens. It is also very important to remember when selecting the parents, that the mother plant will dominate – 60% of its characteristics will be inherited by the seedlings and only 40% of the characteristics of the pollen parent.

### F1 Siblings

These show little variation. The characteristics of both parents are inherited.

The flowers of the **gardenii** crosses are more flared.

The **nobilis** hybrids are slow with harder leaves which can have a median stripe. The flowers are long, pendulous and straight. They take 6-7 years to flower. The recurved flowers are more attractive.

The **miniata/caulescens** cross has recurved flowers and the best F1 flowers. Their flowers are larger and more open with a full umbel.

The reverse cross is also pendulous but with tiny flowers and is not as attractive.

The **miniata/robusta** F1's have a big umbel with dark red flowers. They are very attractive with darker flowers that open and flare more. They flower within 4 years. The reverse cross is different but also beautiful.

### Selecting for F2's.

As a result of segregation and recombination of the genes from the parents in the offspring, the F1 seedlings will have different flowers. Choose those F1's with the best flowers according to the characteristics you are breeding for and cross them.

Thus you can create **yellow interspecifics** by pollinating a Group1

## More Interspecifics Bred by Rudo



Orange Orchid



Shrimp



Sunrise Surprise



Yoshi

yellow *miniata* with a *gardenii*. The F1 offspring will be orange split for yellow.

If you cross the pendulous orange siblings, you can expect in the F3 generation the equivalent of 12.5% to be yellow and with new flower forms.

New flower shapes and colours are not the only desirable qualities of the F2 hybrids – they are also more drought resistant and have different flowering times.

**F3 Hybrids.** You cannot add new qualities by crossing the F2's – the same qualities will be repeated.

To bring about new qualities you must introduce different genes, i.e. pollinate with a different parent.

### Reproducing new cultivars

Clones of a specific cultivar can only be reproduced vegetatively and there are only three ways of doing this - by offsets, line breeding and tissue culture.

We are all familiar with offsets and how slow this process can be. To line breed, select the F2 sibling most similar to the one you wish to reproduce. Cross them and repeat this procedure in the succeeding generations until the seed breeds true. In annuals it takes about 7 generations to achieve this, so it could be a 30 year procedure for *clivia*.

Thus far tissue culture of *clivia*, for example, in Japan of *Vico Yellow*, has not resulted in offspring which are all true to type. However, an Australian believes that this has been so because the wrong part of the plant has been used and that an acceptable result will be obtained if the rhizome itself is used. This is still to be proved, but take care to register your plant breeding rights before allowing anyone to reproduce your special breeds. 100 of the plant in flower are required to qualify for plant breeding rights.

### BREEDING FOR COLOUR

Because of pressure of space, the report on Rudo's talk on this subject has been held over for Cape News 7.

## More Interspecifics Bred by Rudo



Gorgeous Girl



Baby Bronze



Chandelier



Jenny



Green Goblin

## Zebra Confessions!

*(Last year, Di Smith, the very active and enthusiastic Secretary of the NZ Clivia Club, jokingly mentioned in an article that the South Africans were breeding excellent Variegates by adding Zebra poo to their growing mix. Lo and behold she received a serious request for dosages and times and where to find it in New Zealand. She sent this correspondence to some other Cape members, who asked me to try and take a picture of a Zebra standing or squatting over a variegated clivia. I don't own a good variegated and Zebras are rather skittish, so I submitted this reply instead, at which Di laughed so much she could not sleep These images kept on floating by. Enjoy the bit of silliness)*

OUCH! To avoid detention and torture I am prepared to turn State's Witness and confess our misdeeds. In return, however, I demand to receive a new identity and be placed in a witness protection programme, preferably in either the Umtamvuna Reserve (Miniata area) or Brian Tarr's NBI. I must emphasise that I was only a casual observer, not a full participant.

We are aware that the CIA (Clivia Inseminaire Artificiale) has been investigating us. But this Zebra thing has opened this whole can of mealy bugs. Even the pink herring diversion of the Clivia Mirabilis hoax did not put them off. We did not think, however, that they would seriously believe this story of a Clivia in the desert for long, but it did grant us some time to complete our experiments to dominate the Clivia world. But now you are onto us.

I hereby confess that:

1. We have indeed been using Zebra manure to grow and improve Variegated Clivia. The secret is to plant the leaf cuttings in pure, fresh, hot, wet poo, cover it completely with plastic and leave it in a dark, hot, humid place for 3 months.
2. But that is not all. We have been growing Swamp Gardenii in crocodile poo, large truncated miniata (safe against snout beetles) in Elephant manure, tall lanky spotted Nobilis in Giraffe manure, Multicoloured Interspecifics in Macaw and Birds of Paradise poo and pink Caulescens in Flamingo droppings.
3. We have had limited success in our attempts to develop Clivia that flower underground on Earthworm droppings. The theory was that when snails eat the leaves, the flower is protected completely.
4. We also confess to somewhat successful attempts to grow winners using Springbok manure, but the experiments on Protea compost have been a spectacular failure. They are all caught or out lbw.

I am sure there are other subversive experiments, but we are innocent of them. One that I know of, is Felicity Weedon's Foxy Lady (the tawny colour and slinky nature makes me suspect a jackal.)

Have mercy on us. We just followed orders from our superiors!

Wise Guy / Wysneus

## WHICH CLIVIA MINIATA BLOOM BEST ?

Writing in the clivia enthusiasts e-group, Claire Peplowski, a clivia enthusiast in the USA, mentions her experience with growing annuals such as cosmos which will self seed or she will occasionally buy some new seeds and scatter them about. In each year's crop there will be several plants that are as strong as a shrub, thick stemmed, heavily leafed but with few to no flowers. The least vigorous plants produce the most flowers and live the shortest lives. This is a common happening not only with Cosmos but also with other genera. Therefore Claire says it would follow that seed grown Clivia could vary in blooming ability, as do many other observed garden flowers. She maintains that the plant that grows with exceptional vigour seldom is the most satisfactory bloomer.

She says that this brings to mind the theory that the individual plant close to death will work the hardest to bloom and leave seed even if just barely alive.

They have also noticed that if the winter growth begins with many new leaves before a flower spike appears, there is little chance that the plant will flower. When the spike does appear the leaves come later, after it is up a few centimetres. [*Can correct timing of feeding and watering influence this? Eds.*]

She also has her reservations about growing Clivia *miniata* from seed because the blooming of seed grown plants is too variable. We must count our blessings that we have the space to do so!

When acquiring new plants they, therefore, always look for divisions of plants known to be good bloomers.

They have also found, for reasons they cannot explain, that Clivia *miniata* with long strappy leaves are less dependable than those with wider shorter leaves. In all instances they would select the wider and shorter leafed plant because they are far more likely to bloom twice a year, certainly in the Northern Hemisphere, once in early winter, again in midsummer.

## PROMOTING DEVELOPMENT OF OFFSETS

When the offsets are removed from a clivia, the root mass on the mother plant is often too big to fit back into its pot. However, you can simply cut off the bottom section of the rhizome with its roots, leaving the mother plant with sufficient roots to ensure it continues to thrive.

All cut surfaces must be treated with fungicide.

The cut off rhizome, which of course now has no offshoots growing from it, can then be covered in potting soil in its own pot and kept just damp. In time it will produce more offshoots.

However, in December in Australia Helen Marriott showed me how our Japanese colleagues are again extracting maximum benefit from clivia. They make incisions not more than 2mm deep on either side of a root slanting towards each other as in the sides of an 'A' but NOT meeting at the top. Apparently this promotes the growth of a new offset where the incision is made. (Mick Dower)

A technique I first saw in Brian Tarr's shadehouse in Pietermaritzburg, is to place a valuable plant (or allow it to grow) at a 45 degree angle, quite high up in the pot with the stem and some roots above the potting mix. This stimulates multiple offshoot formation and is perhaps not as invasive and radical as cutting off the stem. I have a Nakamura yellow from the late Fred Gibello with 8 shoots, a Charl Malan (group 1?) yellow with 5 shoots, and several others with multiple shoots cultivated in this way. (Coen Calitz)

## SPEEDING UP GERMINATION

Some years ago I heard that Japanese clivia growers speed up the germination of clivia seeds by removing the skin on the seed around the micropore. This is the 'pin spot' on the seed, opposite the seed's 'belly button', where the radicle (root) emerges. I tried it, but stopped when I lost a lot of the seeds treated in this way to fungus.

From a recent discussion on the clivia enthusiasts chat group it is clear that a number of growers worldwide are now using this method successfully.

I therefore decided to try again on a batch of the same miniata seeds harvested late in December, 2004, but treated them with Sporekill to combat any fungus.

The seeds were first soaked overnight in Sporekill solution (1 drop per litre water). A skin deep insertion was made with a scalpel around the micropores of half the seeds and that bit of skin removed. The seeds were then washed again in the same Sporekill solution and all the seeds were placed in the same closed container (such as a film canister) still wet from the solution.

The picture below taken on 18 January 2005 shows the results. On the left (A) are the treated seed a week after treatment. All but one had germinated. The last germinated on 19 January 2005. In the middle (B) are two seeds with the skin flaps opened, but not yet removed, just before the photograph was taken to show how it is done. They germinated by the next day. The seeds on the right (C) were not treated then. Their micropores and 'belly buttons' are clearly visible. When those seed had still not germinated a week later, they were treated in the same way and germinated the next day.



Photo Mick Dower

Treated seeds germinated the next day.

The first germinated treated seed was planted on 18 January 2005 in seedling mix treated with the same Sporekill solution and the others were planted as they germinated. All are growing well without any losses. Subsequent experience has shown, however, that one must not be impatient in using this method. Only do so for seed that you are germinating late – i.e. after September here, and then preferably only when you can see the whiteness of the radicle forming under the micropore.

When that does not happen look carefully to see whether there is any micropore at all, as the seed may be sterile.

Mick Dower

## STERILE SEEDS

Chris Ong from New South Wales in Australia asked the Enthusiasts Group whether they had ever come across sterile seeds before. He had a seed that had been planted for about 4 months and had not germinated. He examined the seed very closely and could not find a micropore. He removed the skin and found just a smooth seed, no micropore and no hole where it might have been. A while later he found a similar seed without a micropore in a new batch of seed.



A Seed without an Embryo



Photos Mick Dower

The same seed bisected where the Embryo should be

Aart van Voorst explained this as follows and has kindly agreed that we publish his explanation with the accompanying photographs as follows: "The reason the seeds are sterile has to do with a mishap in the very early formation of the seed. I will try and keep this simple, but in basic terms the clivia seed that we think of as a single thing is really composed of two types of cells that develop after fertilization, or pollination as we call it in plants. The egg or ovum that develops in the ovary of a plant is made up of a triploid (three sets of chromosomes) endosperm mother cell and a haploid (one set of chromosomes) nuclear cell. The pollen grain is composed of two haploid nuclear cells. During pollination, one pollen nuclear cell fuses with the endosperm mother cell to produce the endosperm (tetraploid, four sets of chromosomes per cell). This is the food supply. The other pollen nuclear cell fuses with the egg nuclear cell and forms the embryo (diploid, two sets of chromosomes per cell) that will be fed by the endosperm as it grows into the baby plant. Just as in mamalian fertilization things can go wrong, they can go wrong with plants too. In the case of the seeds without an embryo (no micropore present) what has happened is that the mother cell and pollen nuclear cell fused ok and the endosperm developed, but the egg nuclear cell and the other pollen nuclear cell failed for some reason to fuse. There are any number of reasons this could happen and I won't go into them here, but the result is what you have seen, a seed without an embryo

(no micropore) and no chance for it to grow into a baby plant even if you waited many, many months.

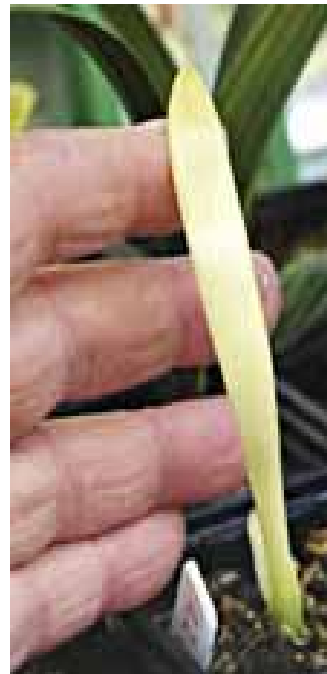
***So both sellers and buyers should examine carefully all seed bought and sold.***

## SURVIVAL TREATMENT FOR ALBINOS

This is another bit of useful advice gleaned from the clivia enthusiasts interest group. Albino seedlings may survive if they are treated with magnesium sulphate ('Epsom Salts'). Spray albino seedlings with 1ml magnesium sulphate diluted in 1 litre of water, once a month. You could also experiment with drenching the albinos with this solution monthly. It promotes the production of chlorophyll by the seedling, which is essential for its survival.

The gibberlins in seaweed extracts also promote growth, so it could do no harm to also feed albinos with Kelpac. Linda Eastman of Upstate New York has also recalled a beneficial recipe from the 1980's of 5ml Epsom Salt, 5ml saltpeter and 2.5ml ammonia mixed in 5 litres water. Others have eulogized about the size of the tomatoes fed with this formula. Let us know to what extent any of these remedies has been successful for you, as some believe that the problem is genetic and cannot be cured.

Mick Dower.



Above: An Albino seedling photographed by Ian Coates

Note that the variegated seedlings would also benefit by the suggested treatment in this article. Faster stronger growth should be the result.

## Clivia Shoots

*This is intended as a forum for our shared passion. Please contribute any brief snippets or reactions to anything in this newsletter or anywhere in the Clivia world, as your personal observations and experiences will be especially welcome and valued.*

### Cheaper Confidor

I have been told in confidence by a major supplier of Agricultural Chemicals that a generic equivalent of Confidor (the only really effective cure for Mealy Bug in Clivia) is planned for the middle of 2005. The cost should be between 50 and 60% of the present > R1300 per litre.

So use up present supplies or reorganise your spraying program, but wait before stocking up again. (Coen Calitz)

*However, we do have a small supply of Confidor in 100mm(R120) and 30mm(R40) dropper bottles which, together with Bulldock(for snout beetle), Sporekill, Kelpac, KicStart and a sticker to protect sprays against rain, will be available for purchase from the Club at the next Work Shops.(Mick Dower).*

### “Sick plants on show?”

In the Clivia world there is justifiable concern about “sick” plants appearing on show benches. No one wants to see plants with fungi, bacteria or viruses or even have them near their treasured plants. However, physical damage from snails, insects, sun, wind and movement also often occur and at the CCC it has been acceptable to manicure these plants to make them more presentable. In other clubs there now seems to be a movement to penalise heavily or disqualify plants with any damage whatsoever, even if the plant is obviously healthy. What do you think about this? (Coen Calitz)

### Is the Ella van Zijl sick?

It has been speculated that the lighter spots and unusual blue-grey sheen on the leaves and the mature flowers of the Ella van Zijl can be attributed to a virus. It seems that this has never been scientifically tested. Several owners, including myself, have confirmed that the suckers are the only true propagators of this strain. The seeds, even when selfed, show huge variation, but always without the characteristic sheen. The original plants and their shoots are very robust and shoot readily. They also have large round and sometimes multiple flower heads, all indications of a healthy plant.

It has come to the attention of Toy that at least one well known judge intends to disqualify all Ella van Zijls from shows, because it is contaminated and sick. (However, it seems that no other Clivia has ever been “infected”.) Such drastic action can surely not be taken

without proof? Especially if the plants are obviously healthy? Why can we not accept it as a morphological difference, in the same way we accept other phenomena with unknown causes, such as variegates, folded leaves and petals, colour spots on the flowers, etc?

(Coen Calitz)

This concern arises from a note by Koos Geldenhuis in the latest Clivia Society Newsletter, but it seems that more has been read into what Koos has written than was intended. I am sure we would all agree with Koos that a plant which appears to be sick should not be allowed on the Show benches. There is more than one source of Ella van Zijl and there are unquestionably some of these which show varying intensities of leaf markings which look like virus. Identification of virus is expensive and would be required for every individual plant showing the symptoms. I do not believe that if one plant is cleared that would cover all Ella van Zijls because, as I have said, the visual problem varies from plant to plant and there is more than one source for the plant.

Many Ella van Zijl plants have no sign of virus but I would agree that an Ella van Zijl plant showing symptoms of what could be virus should not be allowed on the Show benches without a proper certificate that it is virus free. For those that do have the symptoms, follow the advice of Joe Dana, a well known clivia grower from Los Angeles – spray the plant with a solution of 500mg. Tetracycline per gallon of water until the water runs off. Dickie Gunston has done just that and the ‘virus’ symptoms disappeared, meaning, of course, that there could be no reason not to allow his plant on the Show bench. (Mick Dower) Viruses are usually transmitted to neighbouring plants by a what is known as a vector. This is usually an insect (again usually a sap-sucking insect and not a “chewing” insect) that has fed on an infected plant and then later feeds on an uninfected plant, transmitting the virus in the process. I suspect that in South Africa the main culprit in this regard is mealy bug. If you have no mealy bug infestation or have controlled them effectively this could explain why the presence of a virused plant has not led to infections of nearby plants over a period of some months or even longer. Let me hasten to add that I am not suggesting that Ella van Zijl is virused - I have never seen one of these plants and I certainly don't want to enter that debate. However, I find the fact that an application of tetracycline has alleviated the symptoms most interesting. To the best of my knowledge tetracyclines are antibiotics with anti-bacterial activity and no viricidal properties. I do not know of any topical application anywhere in agriculture or horticulture of a viricide that is used to control a virus that has

infected a plant. Prevention by use of virus-free planting material and/or control of the vector is generally what is practised in agriculture. Genetic engineering has also led to the development of plants that are resistant to viruses but that is another animal altogether. (Jim McDermott)

Having read Jim's message, Dickie concluded that the yellow blotches on his plant which the Tetracycline had cured, must have been caused by bacteria, not virus.

### Viruses in Clivia

Which of you will offhand recognise the symptoms of a virus in a Clivia?

Towards the end of last year I consulted with several Stellenbosch experts on viruses in plants. Apparently no scientific studies have been done specifically on Clivia. Prof Johan Burger, from the dept. of Genetics has done extensive work on Ornithogalum and Lachenalia. Apparently, many (perhaps hundreds of) viruses can be present on and in a plant. Some may be beneficial, some harmful and some without effect. The effects of viruses on plants are complex – a specific virus could have different effects in the presence or absence of other or combinations of others. A virus could be dormant and only appear under certain environmental conditions; they can mutate over time. Think of the viruses causing the common cold and influenza. Certainly complex!!

Apparently, a test can be done for only one known virus at a time and each virus has its own indicators. So someone must say for which virus the test should be done. The cost per test is about R200.

Would someone more knowledgeable than us please comment? (Coen Calitz)

### Leaf Disease



Leaf problems of Ian Vermaak's 'Bronze Greenboy'

Ian Vermaak is the proud owner of the much sought after 'Bronze Greenboy' and one sympathises with his great anxiety when its leaves and those of some

of its divided suckers became sick, as shown on this photograph. The problem was referred to Johan Spies and his advice was that:

"The photo shows me two different problems. The dried out parts at the tips of the leaves are the result of nutrition deficiency. We find that this deficiency is often the result of root rot. Below are two photos



Root Rot Symptoms

sent to me by David Najjab of Texas. Root rot was the cause of these deficiency symptoms.

The long patches/stripes on the 'Bronze Greenboy' leaves are possibly caused by *Erwinia carotovora*, which is a bacterium. If it is *Erwinia*, the newest leaves will be affected (i.e. the leaves in the centre of the plant).

#### Treatment:

Remove the affected parts and spray with something like Dithane. If the plant is badly affected this will promote the formation of root rot."

Ian treated his plants accordingly. There was no root rot but he also gave them less water and moved them to a place where they get more air (ventilation). They are recovering well.

## Chemicals in smaller quantities and cheaper?

I recently had occasion to visit the company called Terason in Stellenbosch. They are very much interested to supply chemicals (sprays as well as nutrition) to the Clivia community. According to them we are in serious breach of the law if we sell, supply or distribute chemicals in smaller quantities and in unmarked containers. They are allowed to do this.

They also claim to be cheaper than the Co-ops and they are willing to dispense advice to the Clivia community. The manager is Jacques Beukes (082 416 5165), but all his staff at 021 887 4750 can assist. (Coen Calitz)

## Sixth Clivia Species?

In the latter half of 2004, an article appeared in the Botanical Journal of the Linnean Society in which a new species the *Clivia robusta* was documented. The authors are Murray, Ran, De Lange, Hammett, Truter and Zwanevelder. According to them, this was found in the Pondoland Centre of Endemism, in the South Western corner of KZN and the Eastern coastal part of Transkei.

This announcement has already raised controversy and is sure to be in the news in the near future. I have received a copy of the article in PDF format from the editor of the Veld and Flora and can transmit it to you via E-mail [cjc2@mweb.co.za](mailto:cjc2@mweb.co.za). The article is also available on the Clivia Society website [www.cliviasociety.org](http://www.cliviasociety.org).

(Coen Calitz)

## Mirabilis Tour 2006 Cancelled

NB! I am sorry to have to inform you that permission for the access to the Mirabilis location has been refused. The policy is to not allow anyone specifically to the Clivia. (They are concerned about theft, illegal entry and unregulated trade. The whole position of mirabilis as a protected specie is still in process.)

At my request the policy will be reconsidered in due course, but the time and outcome is unknown.

So both tours, pre and post conference 2006 are unfortunately cancelled. (Coen Calitz)

## Research

Our Club has added a further R25,000 to the R20,000 contributed by it to the research being done into the DNA of the *Clivia Genus* at the Research Centre of the South African National Botanical Institute at Kirstenbosch. Over 100 plants from the wild of all species are being “fingerprinted”, including all the plants referred to in the “Robusta” article. This includes the holotype, i.e. the plant which identifies the species, and which was collected by Jaco Truter on Mount Sullivan, near Port St. Johns. Apparently no DNA work had been done on that plant at the time the article was written.

The photographs below are of *C. gardenii* now in flower collected in the Lusikiski, Umkambathi and Umtamvuna districts, the heart of Pondoland. Note that they all have exerted anthers.

Are they *C. robusta*?

(Mick Dower)



Photos in sequence: Neil Nathan, Claude Felbert and John Winter

The views expressed in this publication are not necessarily those of the Cape Clivia Club, its Committee, or its members.

Editors, Mick Dower with Coen Calitz, Johan Schoombee, Claude Felbert and Johan van der Linde. Design by Claude Felbert and Hilary Adams.