

CLIVIA

NINETEEN



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The Clivia Society caters for *Clivia* enthusiasts throughout the world. It is the umbrella body for a number of constituent Clivia Clubs and interest Groups which meet regularly in South Africa and elsewhere around the world. In addition, the Society has individual members in many countries, some of which also have their own Clivia Clubs. An annual Yearbook and quarterly Newsletters are published by the Society. For information on becoming a member and / or for details of Clivia Clubs and Interest Groups contact the Clivia Society secretary or where appropriate, the International Contacts, at the addresses listed in the inside back cover.

The objectives of the Clivia Society

To coordinate the interests, activities and objectives of constituent Clivia Clubs and associate members;

To participate in activities for the protection and conservation of the genus *Clivia* in its natural habitat, thereby advance the protection of the natural habitats and naturally occurring populations of the genus *Clivia* in accordance with the laws and practices of conservation;

To promote the cultivation, conservation and improvement of the genus *Clivia* by:

- 3.1 The exchange and mutual dissemination of information amongst Constituent Clivia Clubs and associate members;
- 3.2 Where possible, the mutual exchange of plants, seed and pollen amongst Constituent Clivia Clubs and associate members; and
- 3.3 The mutual distribution of specialised knowledge and expertise amongst Constituent Clivia Clubs and associate members;

To promote the progress of and increase in knowledge of the genus *Clivia* and to advance it by enabling research to be done and by the accumulation of data and dissemination thereof amongst constituent Clivia Clubs and associate members;

To promote interest in and knowledge of the genus *Clivia* amongst the general public; and

To do all such things as may be necessary and appropriate for the promotion of the abovementioned objectives.

Front cover 'Joubert's Stripy'

Back cover Other Special mention – Dawie van Heerden

Title page Interspecific, (*C. miniata* x *C. caulescens*) x *C. miniata* – Helen Marriott

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Editor
Joubert van Wyk

IN MEMORIAM

Tribute to Tino Ferero

By Christo Topham

I am writing this tribute as a Clivia friend of Tino and will focus on the friendship we had.

Tino was a remarkable man. A man who always had time for others. A man who in his own quiet and gentle way truly loved this life. A man who always chose to see the beauty and the wonder of this world.

I have wonderful memories of Tino. He was the one who took me under his wing when I joined the Northern Clivia Club in the late nineties. I had the privilege of serving under him on the management team of the Northern Clivia Club. What stood out for me, was the way he handled matters, in a soft and gentle way. He was an example to everyone he met, a true gentleman.

Amusing comments made by Tino:

- If you plant seed you will may be get one Miss World and two Miss South Africas, the rest will be average or below average.
- All Clivia flowers are beautiful; some are more beautiful than others.
- Clivia seeds are the flowers of the future.
- His love of Clivia stories.

Tino loved people and believed that every person with whom he came in contact had something good in them and should be given a chance. He loved to give seeds and plants to people because it made him very happy. He was carried away by a beautiful flower. His knowledge of Clivia was endless. Clivia were a passion and a way of life for Tino. He had Clivia friends all around the world. He corresponded with Clivia people in Australia, New Zealand and America. He exchanged seeds with them. Tino visited other countries to deliver talks and

visited shows. He was respected in the Clivia community in South Africa and the rest of the world.

His Clivia collection was of world standard and he had many well-known Clivia clones which formed the basis

of his Clivia breeding program. His collection of plants included those from Bing Wiese, Ammie Grobler, Pat Gore, Adri Wessels, Bertie Guillaume, Nick Primich, Yoshikazu Nakamura, Sean Chubb, Tienie Holtzhausen and several other well-known breeders. Tino made sure that he stayed up to date with the latest trends in Clivia breeding. Out of his collection came many show winners. He left a treasure of genetic material for us to work with. In my collection I have a few of his plants which I will always treasure.

Tino's contribution to the Clivia world was the following:

- Chairman of the Clivia Society
- Separation of the Clivia Society and Northern Clivia Club
- Chairman of the Northern Clivia Club
- Master Judge
- Honorary member of the Clivia Society and of the Northern Clivia Club.

Tino will be missed, but our memories of him will live forever. Be quiet! Alas, a great man has passed.

Tino was born on 9 September 1936 and passed away on the 28th May 2018 at the age of 80 years and six months.



Tino Ferero

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CONFERENCE - GARDEN VISITS

Glynn Middlewick - Northcliff, Johannesburg

I have been interested in garden plants since childhood. For the past 27 years, I have lived at my present address. As with most Clivia growers, there now is a shortage of suitable places for my Clivia plants on this property. Crosses are made with exciting pod and pollen parents and carefully placed in a suitable tray and secured in a safe position. Unfortunately, seedlings grow slowly and although I do ensure adequate watering and fertilization, the importance of a potential prized hybrid is soon forgotten. The price is also something better not to be remembered. The following year, my interest is diverted to new lists of interesting seed crossings as well as planting out my own crossings. The passing pets, gardeners and hose pipes also play a part in challenging the existence of the seedlings. The labels, carefully placed at the end of a row of seedlings, is easily moved by a number of involved parties. My own lack of well-organized seedling tray placement doesn't help matters either. The shade houses are more organized, but empty spaces allow one to add another plant, then another! A more ruthless approach and the culling of unworthy plants would help with my space crisis.

My interest in the hobby started with the purchase of Nakamura seed from the Northern Clivia Club in about 1998. Rats re-arranged most of them as they were not protected from such invaders. The greatest enjoyment I get is when a new seedling flowers. Often the flower is orange and shows no signs of improvement compared with other flowers that I already have. The appearance of a flower, different from others in my possession, re-assures me and stimulates my interest in further germination of seed. The adult plants provide a spectacular display each year. We don't take enough time to appreciate how great they are. How do we improve their appearance in the next



generation? What pollen or pod parent should this plant be crossed with in order to improve the number of flowers, the size of the flowers or the green throats. A fault many collectors make is the purchase of seeds that are not 'compatible'. The disappointment that occurs when another orange bloom appears, is solved by planting the plant in the garden or giving it as a gift to a fellow gardener. I now can claim my oranges contain a mixture of all the best genes available. The sellers themselves often have not attempted the specific cross previously. A guide for collectors is to depend on the expertise of the sellers and the development of trust in the hybridizer. Germination of seeds is a challenge, particularly when large numbers are involved. Fellow growers often comment that if a disease occurs, be assured that your most valuable seed will be affected. Over the years, trying different methods for germination, the easiest and simplest method for me is the use of paper towelling in a zip lock bag. Keeping the paper moist and not too wet is the secret. Too much water may result in rotting of the seed.





Regular checking of the progress of the seed is important and avoids any disappointments with disease and entanglement of roots in advanced germinating plants. Large numbers of seeds may be germinated in this way and they don't occupy much space in your kitchen.

The range of suitable potting soil mixtures that I have used, has changed over the years. How often I am surprised by the potting soils of fellow growers. We all know that the Clivia plant is very forgiving, but I have found that some potting mixtures are almost too heavy to lift. The variation of mixtures used, ranges from solid soil to orchid type bark mixes. I try to follow advice by potting all the plants in a similar potting mix. A good commercial, bark

based potting soil works well for me. I have recently started adding perlite to the mix, with the hope of increasing the drainage of the potting soil. The potted plants are on wire racks, theoretically creating 'perched' pots with poorer drainage of water. I have been advised to use a capillary mat to increase drainage, but so far have not done this.

Fertilization is an interesting aspect of Clivia growing. We all aim for the shortest time-period between seed germination and blooming. We all want the plants to bloom every year and preferably at the show date. I have tried various foliar feeds over the years. Some are very expensive and are discontinued before a 'true' result is obtained. I have been



using a slow/controlled release 3:1:5 mixture, applied twice a year, but have now started using 'Osmocote'. This fertilizer claims to have trace elements, which may justify the high price. Time will tell whether this magic bullet will make a difference.

The choice of shade netting is almost standard in South Africa. The degree of shade cloth chosen is usually '80 per cent shade.' The colour to select may create a problem. Bright colours

are not very suitable in an area that is visible to all. Black, green and perhaps a mix of white and black are all suitable. Is there a distinct difference in the plant health where different colours are used?

My property is at the end of a *cul-de-sac*. Some of the original indigenous trees on the hill are still present. Several *Acacia robusta* have died from old age. Some wild pear, Buffalo thorn and wild peach are still surviving on the





property. My cycad collection has spread and as they grow much better in the ground, I have moved other things to make way for them. The bird cages are also occupying the space where the swimming pool used to be. The pool water was always too cold to swim in, so after the third crack in the fibreglass lining of the pool, I decided to fill the pool in with soil. Many Clivia plants grow in the garden under the indigenous trees as well as under the buddleias on what should be the pavement. There are two shade houses of a reasonable size and a third small one.

The flowering time for the shade house plants is later than the garden Clivia plants and I hope that Mother Nature will be considerate this year and allow the plants to flower in time for the show! My interest also extends to succulents, mainly Lithops plants, which are kept in a covered 'hot house' which occupies half the patio!

The first lot of Clivia I bought, for the garden, were 100 plants at R5.00 each via the Farmer's Weekly magazine. Out of these or from somewhere, I was fortunate to find a pale pink that darkens with time. Some claim the flower has an 'Appleblossom' like colour, but obviously from Natal. This plant I called 'Willow Bright'. It is not the fastest grower and reluctant to set offsets. The seedlings that were self-crossed have produced similar flowers, ten years later! Just two of them that is, with the rest flowering orange – the 'milkman' is to blame for the

oranges! A visit to Margo McNeil at 'The Shack' was a great outing. Reluctantly she parted with a 'Four Marys', different from the one I had been given previously in exchange for Louisiana lilies. A 'Bronze Green Boy' followed for R6000.00. This was pollinated with 'Tienie's Treasure'. One seedling flowered, no green throat, but a similar flower form to 'BGB'. Variegated leaves appealed to me as did the 'Light of Buddha' plants. Nakamura supplied a lot of seed to various growers and some of these seedlings became available. Five of the crosses of 'Good Yellow' by 'Vico Yellow' flowered in due course. All were yellows of good shape. One umbel of flowers was exceptional; large and attractive. This has been a consistent pleasure in my collection, attacked sometimes by pests, but also slow to multiply. Yellow flowering plants were not readily available in the early days, but I managed to get 50 seedlings from Christo Lotter. Kirstenbosch supplied yellow seedlings, limited to two per customer. Many of the early yellow flowers did not have attractive umbels or flowers. A visit of Cynthia Giddy provided me with two Natal yellow plants. The flower shape of these appealed to me more than the available Group 1 yellows. At that time the belief was that the Giddy yellows could not produce yellow seeds. Cynthia sent most of her offsets to Japan. Daruma plants were imported, Chinese miniatures, plants from the USA and some from Australia. Plants were bought at auctions, Clivia shows, and from offset and seed-lists. The hunger did not seem to lessen with time. Peaches, not readily available, were obtained. The names 'Inspiration', 'Sunset' were two Cameron peaches I obtained also at high prices.

The one disadvantage of offering to accommodate visitors to my garden, is the necessity to moving plants out of the way, so that visitors may safely walk between the plants. I look forward to the visitors and hope that they in turn will be pleased with what they see.

Dawie and Ebeth Strydom also live in Northcliff, so their and my collections may be visited together on the western side of the city, near the Western Bypass.

Michael Boyce – Houghton, Johannesburg

The first time I became aware that there was a plant called 'Clivia' was when I was a teenager and I saw some plants growing near my mother's front gate. I was immediately taken by the contrast between the bright orange flowers and the dark green strap-like leaves.

Until approximately 2009, I never got remotely involved with gardening, with the exception of starting a vegetable patch and admiring various species of plants in other peoples' gardens. In the summer of 2009, I bought some Clivia from my local nursery, for a dark shaded area in my garden. I planted the Clivia and religiously watered them, hoping to bring them into flower – but to no avail. The plants provided some greenery, other than the bare earth, and as they would not flower, I soon forgot about them, however, about six months later I was rewarded when one of the Clivia flowered. I once again bought some Clivia from the nursery, however, this time they were in flower.

A friend, who was staying with me at the time, saw me planting the Clivia and told me

that Peter Gray, a member of the same old boys' club of which I was a member, was also 'into Clivia' and was a member of a Clivia club. On contacting Peter, he invited me to attend a meeting with him that coming Saturday. I attended the meeting, joined the club, and so became a member of the Joburg Clivia Club.

Peter told me about a guy called Ray Top, who he informed me, had hundreds of different coloured Clivia, the seed of which he propagated in a propagator and then grew under grow lights. I contacted Ray and became absolutely smitten after visiting him and viewing his Clivia, which were then in flower.

When I attended my first Joburg Clivia Club show I was doubly smitten; however, on becoming aware of the prices, tried to fool myself that the reason I was 'into' Clivia was for the greenery. Eventually and after numerous visits to Ray's Clivia, which I could not stay away from, and after being introduced to Hilton Atherstone by a mutual friend and seeing his plants, I realised the game was up and that I was well and truly addicted.

Over the years I have bought plants from



Floral display



'Fairytale' Cross

and, very generously, have been given plants, offsets and seed by a number of our more prestigious and well-known growers. A few of

these include, Hilton Atherstone ('Forest Fire' – a sibling of 'Bertie's Bronze', 'Playgirl'), Liz Boyd ('Cameo', 'Rose Dew'), Sean Chubb ('Lady of Oribi Gorge', 'Appleblossom'), Peter Gray ('Coromandel', 'Meyer Green'), Adri Haxton (Nick Primich plants, Nakamura multitepals), Paul Kloeck ('Virgin Queen'), Trevor Pearton ('Trevor's Treat' – my name, various Bearded Man crosses), Andre Potgieter ('Potties Peach', 'Katrina') Pikkie Stumpher ('4 Marys', various excellent bronzes – regrettably not 777), Dawie Strydom ('Bronze Star' – my name), Ray Top ('Peach Tips', 'Big Daddy'),

Rouzell van Coller ('Eugene', 'Andrew Gibson' – original Mick Dower plant), Piet and Rina van



'Salacious Sue'



'Virgin Queen'



'Almost Picotee'

der Merwe ('Greta Louw' - my name, various Hiraq/Group 2 crosses), Francois and Ginny van Rooyen ('Gem's Golden Renaissance', 'Luke's Special'), Leon van Rooyen ('Brown Betty',

reached where a hand sprayer is completely inadequate and I intend investing in a petrol driven back pack mister.

'Jumbo' - not the Dawie Strydom plant) and Bing Wiese ('Polyploid' - ex Adri Haxton).

My set up is a real Heath Robinson affair, consisting of split pole fencing (which has been replaced by a wall), supports and shade cloth, which varies between 20% - 80%, depending on the tree cover. There are approximately 2000 - 3000 plants, with an additional 1000 seedlings. All the various colours, bronze, orange, peach, pink and yellow are represented. The better plants have been placed on plastic picking crates, turned upside down. The picking crates are not economically sensible, but they allow me to move the plants around, without too much of a problem. The seedlings are housed in two shade houses, which I purchased from the father of the woman who sold me my (presently unused) greenhouse.

Over the past year or two I have had major problems with various pests, including, snails, the lily borer caterpillar, mealy bug and scale.

The stage has been



'Michael Boyce's Beatrice'



'Yellow Green Throat'

Clivia have driven me to the very limits of insanity, however, even if one could take a pill to cure the affliction, I would not take it, as the insanity has been more than counter-balanced by the joy Clivia have given me and the lovely people I have met.

Joubert van Wyk – Houghton, Johannesburg

My mom brought our first Clivia home in the early nineties, and in early 2005 my mom was employed by me to look after the nearly 600 plants that the collection had grown to. I read all the books my dad Louis Potgieter had collected, which were all the books that had been published or had been translated into English up till then, and the bug bit me hard. I started buying on eBay, bought car loads at the shows for a few years, visited many of the Clivia growers year after year and bought and bought. In retrospect, it was all rather silly and a significant waste of money, but I learnt a lot about many people involved with Clivia at the time. I acquired the collections of Ammie Grobler, Bing Wiese and of some other Clivia people. The 2006 Conference was amazing, the tours, the people, the presentations and

meeting Marilyn Paskert from California, USA. Marilyn and I had often bid against one another on eBay, and whom I would say has become my best Clivia friend. She invited me to visit California, and together with Diana Holt and her we travelled from San Francisco to Los Angeles visiting a number of notable collections. She also invited me on my first trip to Japan (organised by Shige), which I have visited on three occasion for Clivia, and a trip to China organised by Eddie Pang – all truly amazing.

I erected a shade house on the tennis court, and double stacked plants – again in retrospect a very unfortunate mistake, as I lost a number of plants because of such over-crowding. I have made many mistakes over the years, paying hefty school fees. I have bought many amazing plants from many amazing breeders.



owners, collectors and hobbyists over the years. The negotiations were rather often not simple and not easy, and I learnt a lot. At times the responsibility of taking care of and doing something with the genetic material that in a manner of speaking has been entrusted to me weighs on my conscience. Involving and exposing Jan (my nearly five year old son) to plants and the love our club members have for their *Clivia* and seeing his growing interest in collecting all kinds of seeds with the objective of growing them into plants, gives me great joy. Undertaking habitat visits such as during the *Caulécens* tours of 2006 and 2010, which included Bearded Man, and seeing *C. robusta* growing in streams in Natal and the *C. miniata* at Umtamvuna are amazing. I would love to see *C. mirabilis* in Oorlogskloof, and do a tour with Wayne.

Organisationally I have been





involved as follows with Clivia over the years: Was asked to join the Judges Committee of the Northern Clivia Club in 2008 by Tino Ferrero, and have been invited to judge at a number of shows in the Cape, George, Port Elizabeth, Natal up to Polekwané and Nelspruit over the years. Organised the Society Conference Auctions on two occasions: 2010 in the Cape and 2014 in Natal, and a number of yearly auctions for the NCC. Have been Editor of the Clivia News since 2012, and published five Yearbooks (Numbers 15 through to 19). Currently, I am serving as the

Chairman of the NCC.

I don't generally believe in fertilising my plants as I would like to be able to observe every plant's visible genetic characteristics with as few influences as possible that may trigger phenotype differences. A few things that get me within the Clivia community include the envy that at times shines through, the theft of plants, seeds, or pollen that one hears of from time to time, the concept that someone has 'created' a particular plant as compared to the reality that all that they have done is selected



a plant from a particular crossing of plants that have been placed in their care, and people that take newbies or such like for a ride or take advantage of others.

I hope to one day be able to grow my plants as well as Liz Boyd, and breed like Bing Wiese or many of the amazing breeders we have in our midst. Collecting and breeding Clivia has certainly been a very enjoyable hobby.

Pikkie & Elize Strumpher – Pretoria

We bought our first *Clivia* 20 years ago for the garden and soon afterwards joined the Northern *Clivia* Club to find out more about this wonderful plant. Offsets of quality plants were not available in those days and we frequented the nurseries for plants. We had a lucky break when we bought a bronze green throat from a wholesale nursery, Frohman's Eden, in the Mpumalanga Lowveld. The colour of the flowers was good, but the shape needed improvement.

When the first seedlings flowered in 2002, we were over the moon and put one of them on show at the Joburg Show. It was awarded Best Green Throat and Second Runner-up on Show.

Koos Geldenhuys suggested the name; Gunston, since the colour was similar to the colour of a Gunston cigarette package. 'Gunston' and its brothers formed the core of our breeding program for the next few years and we are now at the fourth generation of green throats.



'New Hope'



'Serenity'



'African Princess'



'Fancy Girl'



'Birchoo Tips'



'Tranquility'

One of the pleasant surprises from our breeding program for green throats was the 777 series. Although the 777s proved to breed true, we were surprised by the diversity of the range of colours. It seems that the 777s will keep us busy for some years to come.

Through the years we have expanded and diversified our collection of breeding plants. This was done mainly through own breeding and selective buying of plants and seeds that will enhance our breeding program.

Although our collection consists of all the different colour variations, we prefer the more exotic colours.

Originally we got interested in Clivia for our garden and through the years we expanded the Clivia area in our garden. Presently we have a few thousand Clivia in our garden. Each year we replace and "upgrade" some of the garden plants to represent our collection. It's difficult to pick which one we enjoy more, our collection or our garden.

ARTICLES

Developing a *Clivia* Heritage Collection

Christo Swart

Introduction

I have enjoyed the beauty of the *Clivia miniata* flowers for many years and still have an orange flowering *Clivia* given to me in the late seventies by the then Director of Parks (Pretoria), the late Jimmy Aves. It was only much later while attending the KwaZulu-Natal *Clivia* Club Show in September 2012 that I signed up as a member and became a collector of these beautiful plants. Further research, reading articles and papers, and interaction with *Clivia* growers and collectors, highlighted that *Clivia* in habitat are not only threatened but are being destroyed at an alarming rate. The main causes of *Clivia* vulnerability are:

- i) Housing and related urban development,
- ii) Land made available for agriculture,
- iii) Plants collected for traditional medicine, and
- iv) Plants collected for ornamental horticulture.

There is a dire need to conserve threatened *Clivia* habitat and heritage species for future generations. Botanic gardens as part of their mandate are well placed to provide a refuge for *Clivia* heritage species.

The Durban Botanic Gardens was approached in December 2015 with a proposal to establish and manage a *Clivia* Heritage Collection in the gardens. This included access to the Departmental propagation facilities and where possible to assist in conserving *Clivia* species within their existing natural habitat.

The Durban Botanic Gardens (established in 1849) is currently the oldest surviving botanic garden on the African continent and manages major plant collections that include cycads, palms and orchids. The Durban Botanic Gardens is also a member of Botanic Gardens Conservation International (BGCI) and responsible primarily for plant conservation and plant-based education as outlined in its key strategic principles namely:

- Biodiversity,
- Education,
- Heritage,
- Research,
- Horticultural Excellence, and
- Green Innovation.

As a Botanic Garden with plant conservation, education, research and botanical heritage as part of its core values, a *Clivia* Heritage Collection was considered to be a worthy addition to the Gardens already existing collections. The conservation of *Clivia* as a genus as well as the conservation of its genetic and cultural heritage will be addressed in this undertaking.

The feasibility of such a project was discussed with members of the KZN *Clivia* Club and it was agreed that this project is of great importance. The consultation process in terms of the project was then escalated to the *Clivia* Society of South Africa and support obtained from the Chairperson, Glynn Middlewick who kindly provided guidance and raised some pertinent issues for consideration. One issue that will need attention when taking the project forward is compliance in terms of legislation.

The new *Clivia* Heritage Programme is a collaboration between the retired Deputy Head of eThekweni Parks, Leisure & Cemeteries, Christo Swart and the Durban Botanic Gardens Collections, Horticulture and Education Team. On-going research and development will be undertaken by the Department's Micropropagation and specialist nursery staff, with support from the *Clivia* Society in this endeavour as well as assistance from the KZN *Clivia* Club, a member of the *Clivia* Society.

CLIVIA HERITAGE PROGRAMME:

SCOPE OF PROJECT

A series of meetings commenced and the objectives for the Project were defined, namely:

- Goal 1: Develop a *Clivia* Heritage Collection at the Durban Botanic Gardens as part of a broader conservation gene-banking initiative.
- Goal 2: Integrate *Clivia* conservation as a theme into the existing Education Programme at the Gardens with suitable learning support materials and activity-based learning programmes aimed at students of all ages.
- Goal 3: Explore further research, publications and partnership opportunities, so as to add value to the overall conservation effort of *Clivia*.

Goal 1

1.1 Develop a Management Programme for the *Clivia* Heritage Collection requires that:

- The information on a particular plant is correct and complete. Only specifically selected habitat plants with accurate traceability should be allowed in the collection.
- Heritage plants grown by way of Tissue Culture collected from reputable growers and/or collectors and documented accordingly are to be included in the collection.
- The Heritage Collection will be accurately labelled and documented.

Every effort will be made to maintain the plant in its original form in the collection. To this end only offsets from reputable sources will be accepted. Seedlings of a type will not be regarded as the type.

In situ work: will include mapping of local *Clivia* populations.

Ex situ work: The Production & Display Section has included *Clivia* in the Department's Threatened or Protected species (ToPs) permit application. A collecting and research permit for *Clivia* will be obtained to comply with legislative requirements.

1.2 Collection Display and Interpretation

Selected *Clivia* species will be grown in the Gardens at particular sites suitable for *Clivia* cultivation. The more valuable habitat plants will be placed in a secure environment.

The *Clivia* Heritage Collection will include

information and insight on the historic background of *Clivia*. Information provided will also include the distribution of *Clivia*, as they are endemic to South Africa with many occurring in KwaZulu-Natal.

The descriptive text will be in both English and isiZulu. Bold visual elements will be included as part of the Gardens Signage Master Plan and map.

Goal 2

2.1 Integrate *Clivia* conservation into the existing education programme

A *Clivia* propagation project and challenge for local schools will be incorporated into the Durban Botanic Gardens Schools Programme and training workshops will be held with DBG Education Guides. This will form part of a long term schools project, taking into account that a *Clivia* propagated by way of seed takes four years or longer to reach maturity. On-going contact with the schools that have entered the *Clivia* Challenge will therefore be important, given that progress of the plants needs to be monitored and assistance with replanting and pest control needs to be given. The objective will be to educate, stimulate conservation, learning and engendering a lasting interest in *Clivia* or simply growing plants. Hopefully many will be encouraged to embark on a future career in Horticulture or Botany.

The plants grown from these activities can then be planted at the respective schools as part of the *Clivia* Challenge Programme. Schools will also be encouraged to visit *Clivia* Society shows in order to stimulate and sustain further interest.

Goal 3

3.1 Conservation

All *Clivia* species are utilised for the traditional medicinal plant trade, whilst *Clivia miniata* (Lindl.) Bosse is the most popular species of this genus in the international ornamental plant industry. Other *Clivia* species also have the potential to be successful in the international floricultural industry but on a smaller scale. The current plant sold as *Clivia miniata* is generally far removed from its habitat ancestor. It can now be regarded as a domesticated *Clivia* and is seldom

pure as breeders have interbred species to obtain more attractive plants. However, quite a number of plants are still being collected mainly for the landscaping market.

Unsustainable harvesting from natural populations has caused population sizes of all species within the genus to decline to vulnerable conservation status. The South African National Biodiversity Institute (SANBI) has Red-listed habitat *Clivia* as "Vulnerable" and they thus face a high risk of extinction due to over exploitation.

Clivia have important cultural and economic benefits, be it for horticultural or medicinal value. Identifying and conserving individual plants from wild populations needs to be considered. The focus needs to include the preservation of variations especially variation that differs from the norm as this may have potential for future breeding or research.

Strategies to ensure conservation of *Clivia* species need to include both in situ and ex situ conservation. To implement both in situ and ex situ conservation strategies, it is necessary that all aspects of plant propagation be thoroughly investigated.

The conservation of *Clivia miniata* in relation to traditional medicine

The entire plant or rhizome of *Clivia miniata* is reportedly used in traditional medicine for the treatment of snakebite, fever and to ease child birth. It is also sprinkled around the homestead to stop people damaging the property. The uses of plants to treat diseases go back to ancient times and plants have continued to play an important role in traditional Zulu medicine. However, the growing demand is threatening the existence of habitat plants as unscrupulous collectors strip the wild of its natural flora.

The "illegal harvesting" of plant material poses a major management problem for the Nature Reserves within eThekweni. In an effort to control the removal of plant material, The Silverglen Medicinal Plant Nursery was established to cultivate plants required by herbalists and also to propagate rare plant species that are in danger of extinction. It further seeks to reveal the scope of opportunities in the medicinal plant nursery industry and promote awareness of the need

to sustain medicinal plant populations in their natural environment.

The Silverglen Medicinal Plant Nursery is an important part of the *Clivia* Heritage Programme, in that it aims to provide education on plant propagation and focuses on the conservation of plant material used in traditional medicine. In this regard herbalists and herb collectors are encouraged and empowered to conserve the medicinal plant population by collecting seed for planting in their own gardens.

The main mechanism used to pass on the skill of plant propagation is a three day course with emphasis placed on the practical application of knowing and growing medicinal plants. The outcome is that by the end of the training programme, herbalists and herb collectors will understand how a nursery functions and how the imparted skills will benefit them in growing their own medicinal plants.

3.2 In Vitro Propagation

In vitro propagation techniques are considered useful tools for cultivating and conserving plants which are difficult or slow to propagate conventionally. This project will assess the potential of *in vitro* culture technologies as a tool to be used in a conservation programme for *Clivia* species. The present Tissue Culture project focuses on evaluating *in vitro* propagation of species indigenous but not restricted to KwaZulu Natal, South Africa. The species *Clivia miniata*, *Clivia robusta* and *Clivia gardenii* which are found in KwaZulu Natal, are the focus species of the present study.

Available micropropagation protocols are being assessed for their efficiency to regenerate *Clivia*. Modifications to existing protocols are being investigated with the ultimate aim of optimising tissue culture procedures. Components in this process are:

- Optimise suitable decontamination procedures for various explant types considered for *in vitro* culture
- Establish a micropropagation protocol for seed derived explants
- Identify and establish *in vitro* collection procedures for explants from wild populations and rare genotypes

- Establish long-term slow growth storage procedures for tissue culture plantlets to ensure long-term sustainable availability of threatened and rare genotypes

Information gathered in this regard will assist in the propagation and conservation of significant *Clivia* species, especially habitat plants. The project is regarded as a long-term endeavour with several short and medium term milestones. Specific areas of interest that will be documented and ultimately published:

- Challenges experienced during the propagation process and recommended solutions.
- Establishing the best method of harvesting plant material for propagation and development of protocols for *Clivia*.

Phase 1: Launch of the Heritage Program: Display and Education Programme

The *Clivia* Heritage Programme was launched on the 10th September 2016 and included a weekend-long display of all six *Clivia* species in the Durban Botanic Gardens Biodiversity House. Assistance was generously provided by the Durban Botanic Gardens who made available the Biodiversity House and also assisted with the preparation of the display.

Interpretation signage formed an integral part of the display, providing information on a variety of relevant *Clivia*-related topics in English and isiZulu.

Plants for the display were provided by Sean Chubb and Felix Middleton, who also assisted with the transport and display permits.

The exhibition was a success as attested by the number of visitors viewing the display.

SCHOOLS EDUCATION PROGRAM

The Durban Botanic Gardens Education Team together with Val Thurston of the KZN *Clivia* Club ran three school programmes, with approximately 30 learners per programme, during the second week of September.

Learners from Clayton Primary were introduced to the wonders of *Clivia* and then given hands-on experience in propagation of *Clivia*. The learners were shown how to clean and prepare the seed for planting. The different stages of seedling development were also explained. The children

had the opportunity of cleaning, treating and planting seed themselves. This was done with much excitement and enthusiasm. The seed was taken back to school and a follow-up visit is scheduled for June this year when the seedlings will be transplanted in bigger containers. Learners attending the programme last year had the opportunity of seeing *Clivia* in full bloom in the Gardens Biodiversity House.

Seed for the project was kindly made available by Sean Chubb, Val Thurston and members of the KZN *Clivia* Club. Francois van Rooyen made available an information brochure on how to care for your *Clivia*, which was provided to each teacher and learner. This was a successful programme hosted by the Gardens Education Officer, Jody Fuchs and his Education Team.

CONSERVATION WORKSHOP

A workshop on indigenous *Clivia* and Orchid conservation was also held during the same week for all eThekweni Parks Department Horticultural and Conservation Staff.

Phase 2: *Clivia* Heritage Programme, 2017

The *Clivia* Heritage Programme now moves into its second phase:

Sustainability:

This will be an on-going long term project which builds on the 2016 projects. It includes the collection of habitat heritage plants, continuing with research and cultivation of *Clivia* plants and the hosting of a curriculum based *Clivia* Heritage Program as part of the Gardens Schools Education Programme.



Assistance with the preparation of the plants



Collection:

- Obtaining required permits for collection and research purposes.
- Development of collection protocols which include:

Collection ex situ

- Preparations for the housing of the collections
- Recording and labelling of Habitat Heritage plants

Display:

A display similar to the one held in 2016 at the Durban Botanic Gardens was undertaken at the KZN Clivia Club Show in September 2017. The KZN Clivia Club in partnership with the Durban Botanic Gardens and EThekweni Parks' Production and Display Section also participated in the 42nd Witness Garden Show which took place from 22 to 25 September 2017 in Pieter Maritzburg. The show saw 18 125 visitors.

The theme and brief provided for our stand was the "Beauty and the Beast". In this presentation the Beauty is the six Clivia species and the Beast shows and highlighted the fact that Clivia and its natural habitat are not only threatened but are



The display at the Durban Botanic Gardens





Educating a new generation of horticulturalists

being destroyed at an alarming rate. This was depicted in the interpretative signage within the display. A big thank you goes to the team that made the display possible: Sean Chubb making plants available, Felix Middleton and the team from EThekweni Municipality lead by Justin Oxland and Siphiso Siphiso Mhlongo.

The displays were judged by Chelsea Flower Show mentored judges who applied objective standards, a vital prerequisite, to preserving the credibility of the adjudication process. The Clivia Society's KZN Clivia Club was awarded a Bronze.

Education:

Building on the 2016 program the next Schools Program will take place during the last week in May and September. We plan to reach out to approximately 180 Grade 4 learners who will experience an introduction to *Clivias* and their propagation. Each learner will receive a small container, a *Clivia* seed and some potting soil. Members of the KZN Clivia Club will instruct learners on the finer details of *Clivia* propagation from seed.



Clivia micro-propagation via Tissue Culture

Research: Micro Propagation (In Vitro)

Progress and future expectations:

Thus far, the potential of using seed derived explants to regenerate *in vitro* plantlets is being carried out using seed of *C. miniata* plants that were maintained under greenhouse conditions. The investigation focused on deriving shoots from the leaf bases of seedlings. Bud multiplication was influenced by subculture frequency in the multiplication phase, therefore further work to evaluate the most optimum subculture frequency in the multiplication phase is being investigated. There was no difference in the bud multiplication frequency observed in the two different multiplication medium compositions considered in this investigation, however there was a difference in the frequency of basal callusing for explants transferred to the two different multiplication media considered. To evaluate the survival of *in vitro* generated plantlets in natural growing conditions, acclimatisation of *in vitro* rooted plantlets (Fig 3) is currently in progress.

The onset of initial flowering will also be monitored, once acclimatized plants reach maturity. Seedling derived explants from various hybrid crosses of *C. miniata* are now being evaluated for their response to *in vitro* propagation and to evaluate if genotypic differences amongst explants influence the rate of *in vitro* plantlet regeneration. Similar work is also being carried out with *C. gardenii*. The potential of using basal tissue of young petals and young ovaries as explants described by Wang et al (2012) for *in vitro* propagation will also be attempted for elite *Clivia* genotypes believed to have floricultural potential and the clonal fidelity

of the *in vitro* derived plants will be evaluated.

Network and support:

As with any project of this nature, support is crucial to success. Support is needed not only in access to plant material but also to local expertise in *Clivia* husbandry and distribution. To ensure legal compliance with collecting of plant material on-going communication with SANBI and Ezenwelo Wild Life will be pursued.

My thanks to the following staff of eThekweni Municipality Parks, Leisure & Cemeteries Department (Durban Botanic Gardens, Production & Display and Silverglen Medicinal Plant Nursery) for their contribution in the project: Sbu Mkhwanazi, Martin Clement, Jody Fuchs, Viloshanie Reddy, Teddy Govender and Brian Abrahams.

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Roots - Part I: Take good care of the roots of the *Clivia* plant

By Lena van der Merwe

Clivia enthusiasts go out of their way to buy the *Clivia* plants with the best genetic material for their collections. In the first few years, these plants flourish and are the joy and pride of their owner. Then disaster strikes: the plants don't grow well anymore and the leaf tips start to die back.

This die-back of the leaf tips is usually noticed in the older leaves. Is it a disease? Is it caused by a bacterium, a fungus or a virus? What treatment will cure this sick plant? Some enthusiasts remove the affected leaf entirely; others just cut off the tip and reshape it, while others start spraying with every kind of fungicide or chemical available, but to no avail. These actions do not cure the problem of the plant.

The fact is that the die-back of the leaves is a manifestation of poor growth conditions. The overlooked factor for growing healthy plants is the growing of healthy plant roots. Healthy plant roots not only require water and nutrients, but also oxygen. A potting medium with a porosity of 25% is needed to ensure enough oxygen at root level.

When potting the plant originally, the potting medium met this porosity requirement and the plant grew well. The coarse material in the potting medium (for instance pine bark) decomposes over time forming a very fine material,

leading to compaction and loss of porosity in the medium. This leads to shrivelling of the roots and dying of the root tips. The roots are unable to supply the necessary 'food' to the leaves. The plant then tries to compensate by drawing "food" from the older leaf tips (older part of the leaf). Not all elements can be moved and this then leads to poor overall growth of the plant.



Plant with dead leaf tips



Potting medium of the plant with healthy roots showing signs of compaction



Comparison of healthier roots (on top) and shriveled roots



Healthy root plant on top of the shriveled root plant



Plant with dead leaf tips



Not a single healthy root tip here



Plant with healthier roots

Take good care of the roots and the plant will reward you with healthy foliage and flowers, justifying all the money spent on its acquisition.

Only one healthy root tip on the plant



Next time, before spraying chemicals unnecessarily, remove the plant from the pot and inspect the roots. Is there any sign of fungi, such as mycelia or fruit bodies present? If so, spray with a suitable fungicide. Do the roots look thick, plump and healthy or are they shrunken and withered with mainly dead root tips? If poor roots are noticed, replace the compacted mix with the correct potting mix. Remember only the root tip – about 20 mm – is involved in the uptake of nutrients. If the root tip is lost, the root dies off and the plant needs to grow a new root from scratch.

After four months, the same repotted plant should be revisited and photos taken to highlight any positive changes.



Potting medium of the plant with the healthier roots. Here is already signs of compaction of the potting medium



The plant medium of the bad roots plant. Look at the fineness of the potting mix



The obviously shriveled roots



Root tips all shriveled



Third from the right the healthy root tip compared with the shriveled root tips

Roots – Part 2: Give the roots oxygen for healthy growth

By Lena van der Merwe

Aquatic plants, such as water lilies and lotuses, have special cells – aerenchyma – in their stems that allow for the exchange of gasses between shoot and the root. This spongy tissue forms spaces or air channels with low-resistance, which serve as an internal pathway for the exchange of gasses such as oxygen and ethylene between the leaves above the water and the submerged roots.

Aerenchyma does sometimes develop to a certain extent in plants not adapted to grow in water during flooding, but is unable to really supply enough oxygen to the roots. The roots suffer from a lack of oxygen – anoxia – which leads to the production of 1-aminocyclopropane-1-carboxylic acid, ACC, which is then transported to the leaves where it gets oxidised and ethylene forms. Ethylene has several unwanted effects for the Clivia grower:

- Ethylene causes leaves and flowers to die.
- It causes leaves to curl into themselves
- It causes leaves to hang down, perhaps helping the plant to lose water.



Plant no 4 showing unhealthy leaves & tips



This picture clearly shows the adventitious roots growing out at the top of the stem (left of the thumb)



Plant no 4 Note the roots growing out of the soil – begging for new growth mix



Plant no 4
Note the healthy roots close to the stem; rotten roots in the growing medium



Plant no 4 showing that the pine bark was not well composted before use as growing medium



Plant no 4. Rotten roots



Plant no 4. Note the roots all dead to the left with the healthy roots climbing out of the growing medium to the right bottom close to the leaf base

- It causes short and stumpy growth of the plant.

Plant roots need oxygen to grow new cells, to repair cells and to absorb nutrients and water. Potassium uptake is the most sensitive to a lack



Plant no 4 leaf showing possible fungus lesions



Plant no 4 with a lesion showing fungus

of oxygen, while nitrate is the least sensitive, as the

plant is able to get some oxygen from nitrates in their reduction to ammonia.

Roots undergo measureable changes within minutes of complete absence of oxygen. The root growth ceases. The uptake of especially calcium, potassium and phosphorus is almost stopped. The transport of water in the roots is reduced by up to a third. The roots produce alcohol and ethylene, which are toxins, and the production of hormone (auxins) is upset. The combined effect of these changes is to cause the death of the roots, wilting, chlorosis and a downward curving of the plant leaves, calcium deficiency and adventitious root growth on the stem.



Chlorotic leaves of Plant no 2.
No new leaves



Chlorotic leaves of Plant no 3



Folded leaves of Plant no 3

Oxygen moves into the growing medium by diffusion. First it moves from the atmosphere through the larger pores in a well-drained medium, then through the maze of pores to the roots where it is used. Micro-organisms together with the roots deplete the oxygen concentration and more oxygen diffuses in from the atmosphere. The diffusion-rate depends on the size of the pores. Small pores can be compared to a closed door – slow movement of oxygen. Large connected pores lead to a more substantial supply of oxygen to the roots.

There are other minor ways oxygen can enter the growing medium:

- Heating and cooling. During heating some air escapes; cooling results in air being drawn back in.
- Wind. Wind gusts increase entry of air into the top layers of the medium.
- Water. Water pushes air out, but as it moves down, it pulls more air into the medium.

Likewise, other gasses produced in the growing medium leave it through diffusion.

Porosity measured as air-filled porosity, AFP, of the growing medium for *Civia* should be around 25%, similar to that required for cymbidium orchids. This porosity also prevents fungal diseases, such as *Phytophthora*, of the roots and a high growth rate can be attained with the correct watering regime. In cooler and wetter parts, the AFP should be 35% to 40% if root rotting is to be prevented.

Fertilisers containing peroxides and claiming to improve oxygenation in the growing medium do so only for about one hour and are not a solution for too low AFP of the growing medium and too low oxygen concentration at the roots.

Every *Civia* grower has his own preference for a growing medium, based on his cultivating regime. Most suppliers of growing media will be able to assist you with a growing medium with the suitable AFP of about 25%.

Roots – Part 3: *Colletotrichum* and *Clivia*

By Lena van der Merwe

"Colletotrichum: complex species or species complexes?" (Eds, Damm, U., Cannon, P.F. & Crous, P.W., 2012). Well known mycologists have battled with this question since the advent of microscopes. Professor Johan Spies, the previous chair of the Clivia Society, collected affected Clivia leaves, which were analysed at the Free State University. He reported back in 2005 that the only fungus found was *Colletotrichum*.

Like plants, fungus propagates asexually and sexually and cross breeds. The morphology (study of form) of the sexually bred fungi differs from the asexually bred ones. Morphology-based (or pre-molecular era) identification led to the proliferation in *Colletotrichum* species. The names of the sexual forms differ from those of the asexual forms. So, *Colletotrichum* is recognised as the asexual genus of the fungi with some species linked to sexual forms of the genus *Glomerella* (also known as *Glomerellaceae* or *Glomerellales*). The advent of the molecular era (gene analysis) or "the fungal molecular phylogenetic revolution" (post 1995) gave geneticists the tools to identify organisms on a molecular level and mycologists can now identify fungi more "correctly" and are busy untangling the tangle surrounding the genus *Colletotrichum*.

This is enough regarding the organism's classification.

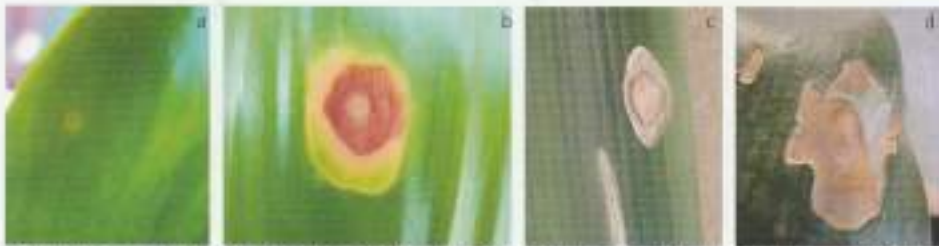
It was believed in the past, incorrectly, that *Colletotrichum* is host-specific and location-specific. These beliefs contributed to the proliferation of species names in the genus.

Many *Colletotrichum* species exist as endophytes (live within a plant for part of its life cycle without causing apparent disease) especially in angiosperms (flowering and seed-bearing plants) in the temperate, tropical and sub-tropical regions. This applies to cultivated crops and ornamental plants, as well as to wild plants.

Like other fungal pathogens the *Colletotrichum* asexual form is most commonly associated with disease symptoms. The sexual forms tend to be limited to dead host tissues. In other words, they aid in composting dead plant litter, making bound nutrients available once more to living plants. In contrast to the asexual form, the sexual form of *Colletotrichum* is not well studied.

The genus *Colletotrichum* is the eighth most important group of plant pathogenic fungi in the world. It causes the disease anthracnose, a well-known disease in plants. The disease develops in warm, humid and wet conditions which favour the infection, sporulation and spread of *Colletotrichum* species. In the dispersal of the pathogen, the sexual stage of the fungus, *Glomerella*, is generally thought to be less important than the *Colletotrichum* stage, because dispersal is primarily via asexual spores (conidia) produced by *Colletotrichum*. The pathogen can also be spread through infected seed produced in infected pods or fruit of plants.

Colletotrichum species may be seed-borne and can survive in soil by growing saprophytically as a decomposer of dead plant material, and may be spread by water-splash dispersal of conidia and air transmission of ascospores from the sexual form. The spores germinate on the plant surface, penetrate the cuticle and epidermal cells and start the infection. They first exhibit a biotrophic phase with infected tissues remaining symptomless and may also, for some time, be dormant in the plant cells (the endophyte stage of its life cycle). The fungus then enters a necrotrophic phase resulting in significant dead plant cells and the emergence of pathogenic lesions. The biotrophic life strategies adopted by *Colletotrichum* species contribute to their prominence as symptomless endophytes of living plant tissues. When the plant is stressed (not growing well such as when the roots are unable to absorb water and nutrients) and not supplying



Disfiguring spots with typical concentric rings observed on *Clivia* leaves. a. The slightly sunken brown spot forming in the beginning. b. The typical yellow halo around the brown spot. c. Dead plant tissue in the spot. d. The dead plant tissue breaking loose.

enough nutrients to the fungus, the fungus then become necrotrophic killing the living plant cells and pathogenic lesions are observed.

Symptoms

The most common symptoms of "*Colletotrichum*" anthracnose on *Clivia* are disfiguring spots with more or less concentric rings on the leaves.

Eventually the leaf dies. Lesions initially appear as small water-soaked circular areas, which over time become slightly sunken, tan to dark brown or black in colour, surrounded by a bright yellow halo. Under favourable environmental conditions (i.e. high humidity and/or temperature) fruiting bodies may be observed on dead tissue in the centre of spots. When the sexual stage of the fungus is present, globose fruiting bodies (perithecia) may be produced by the fungus. Foliar symptoms of "*Colletotrichum*" can easily be confused with leaf spots caused by other species of fungi and need to be confirmed by laboratory identification.

All plants investigated confirmed the view that when the *Clivia* plant is stressed and unable to supply the endophyte *Colletotrichum* with enough nutrients, the fungus then starts to destroy the plant cells and pathogenic lesions are observed disfiguring the leaves with brown spots surrounded by yellow halos.

Disease management

Use a growing medium that will not decompose over time, losing its air filled porosity. Further decomposition will result in a decrease in oxygen supply at root level.

The key to effective management of anthrac-

nose is appropriate nursery hygiene practice. There are some basic principles which generally apply:

- If possible, avoid high temperatures and humidity.
- Minimise plant stress (e.g. water and temperature stress).
- If possible avoid overhead irrigation or exposure to rainfall as spores are spread by water splash.
- Preferably water early in the day so that foliage dries out before evening.
- Reduce periods of leaf wetness by promoting air circulation and avoiding close packing of plants.
- Do not handle plants when wet.
- Control insect pests and avoid injury to the plant.
- Separate diseased plants from healthy ones.
- Remove and discard severely affected plants.
- Prune out and discard diseased leaves and remove any leaf litter accumulating at the



Plant showing typical signs of anthracnose



All roots (older roots) in the middle are rotten; the growing medium is a fine mass. Between the container and the growing medium newer roots grow as seen left in picture A. Picture B shows the dead roots in the centre of the growing medium.

base of plants to minimise the build-up of spores.

- To aid recovery of plants affected by leaf spots and blights, fertilise and water well.

Apply a protective fungicide (e.g. Chlorothalonil, Mancozeb and copper-based fungicides) to prevent infection from occurring in the first place, but use fungicides only when necessary. In the case of removing offsets, it is necessary to pre-treat them with a fungicide before planting.

The fungus, *Trichoderma harzianum* mixed into the growing medium, aids in the prevention of anthracnose infection. Other fungicides are listed in Table 1 above. Do not use the same fungicide more than about seven times in a row.

Use a grow medium that will not decompose to finer material over time. Apply good hygiene measures in your plant house, prevent water stress and water splash and ensure good ventilation to prevent this disastrous disease anthracnose from disfiguring and destroying the leaves of your Clivia plants.

Summary

Clivia leaves contribute significantly to the attractiveness of the genus, and the frequent appearance of disfiguring marks on their surfaces is a significant problem for enthusiasts.

Table 1. Examples of fungicides for the treatment and prevention of Anthracnose disease

Active ingredient	Example of formulated product
Captan	Captan 80WDG
Trifloxystrobin	Flint 50WG
Trifloxystrobin + Fluopyram	Luna Sensation
Pyraclostrobin + Fluxapyroxad	Merivon
Pyraclostrobin + Boscalid	Pristine WG
Potassium Phosphite	Prophyt
Ziram	Ziram 76DF
Fluazinam	Omega 500F

Colletotrichum fungus is frequently the cause and, prior to 1995, its variability in form led to the taxonomic naming of many species. Then came the molecular revolution in genetics, and it has been determined that many of these forms are but variants of *Colletotrichum*. For example, *Glomerella tucumanensis* is now accepted as the sexual form of *Colletotrichum falcatum*, the cause of red rot of sugarcane.

This variability includes the growth of the fungus on dead or living plant tissue, with positive (composting) and negative (disease) results.

The article concludes with advice on cultural practices to avoid and fungicides to control *Colletotrichum*.

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A trip through *Clivia* wonderland

By Felicity Weeden

This is a journey through some of the beautiful habitat colonies of the various *Clivia* species.

Included are a few interesting items regarding the discovery and breeding of certain *Clivia* and also the preservation and destruction of certain colonies.

The journey starts where the first habitat *Clivia* appears in the Eastern Cape near Grahamstown and continues up northwards to the Swaziland border and the Zoutpansberg, and then right across the country and ending at Oorlogskloof near Nieuwoudtville.

Clivia are known to us largely as pleasing orange-flowered lily-like plants growing in shady parts of the garden.

However, even in the habitat there seems to be a great deal of natural hybridising taking place with the result that shades of orange, red, pastel shades, peach and yellow and patterned flowers are also found.

Starting in the Eastern Cape near Grahamstown, *Clivia nobilis* with its hard dark green serrated leaves and pretty pendulous flower, often with green tips, grows in the dense and rich forest and it is here that the first collection of *Clivia* was made by Miss Gladys Blackbeard in the 1920s. She was probably the first local grower and hybridiser who attempted an interspecific cross i.e. a cross between two species, crossing *C. miniata* and *C. nobilis*.

Moving up the East Coast to the Morgan Bay area and beyond, both *C. nobilis* and *C. miniata* grow in vast quantities and close proximity to each other in the most beautiful surroundings on very steep very rocky inclines and very close to the sea. Some plants actually grow on the top of enormous boulders with virtually no soil or leaf mould around them. At Kei Mouth, *C. nobilis* grows in pure sea sand under the milkwood trees, where the sea is eroding the sand dunes. It is close to this area in the southern Transkei near



C. nobilis

Photographed by Felicity Weeden



Autumn trees in Fezter-Witzan

Giant rocks topped with Clivia

the mouth of the Qhora River that the highly prized white or cream blushed pink *C. miniata* was discovered, now named 'Appleblossom'. Interestingly when attempting to breed with this lovely form, it was found that the plants were not all compatible and annoyingly, orange flowers resulted. With considerable time, care and effort Cape Clivia Club member Ian Brown discovered which clones were compatible and so success was achieved, and thus this exceptional beauty has been preserved for posterity; happily, as this habitat location has been completely denuded.

Moving further North to the Port St. John's area the journey takes us up a really steep mountain track through the ancient and stately trees. Here *Clivia miniata* were growing and blooming beautifully in unbelievably dry conditions in incredibly dense and thorny bush. In another location a short distance away where it was suspected that *C. robusta* might grow, the mountainside was so steep that it was necessary to wedge oneself behind huge boulders!

KwaZulu-Natal is the next port of call. During the mid 1800s, Major Robert Garden, a professional soldier, identified and collected an unusual plant here which was subsequently

named *Clivia gardenii* in his honour. This is another pendulous species with long soft leaves and comes in a wide range of colours from near white to rich brick reds, very often with the tepals beautifully tipped with green.

Usually *Clivia* grow, as described, in dry and very well drained situations. In swampy areas, however, *Clivia* were discovered growing with roots right in the water. This plant is very similar to *C. gardenii* but very much bigger, usually referred to as the "Swamp Gardenii", but is actually named *C. robusta*. This species also enjoys a wide range of colours and is considered to be a very good candidate for breeding interspecifics.

Near Port Edward there is an exceptionally lovely *Clivia miniata* colony in the Umtamvuna Nature Reserve. Climbing down a clearly marked and very steep trail, through wonderful ancient forest, this stunning natural *Clivia* garden emerges, set among huge fallen trees and enormous boulders higher than a tall man, decked with *Clivia* in full bloom. Here the colours vary from orange through many pastel shades to some remarkably fine pinks.

While *Clivia* is normally associated with narrow strap-like leaves, in this area remarkably broad



Necobates, taken in Fischny-Walden

Nature's landscaping – Morgers Bay

leaved specimens were identified.

On the opposite side of this gorge is another outstandingly lovely natural Clivia garden in an area known as Mzamba. Almost impossible to reach because of the rugged terrain, it is perched

on the edge of a cliff which drops away for hundreds of feet. Here the most amazing plants flourish exhibiting thick grey leaves on bigger than average plants, and enormous red or pink flowers. This is truly Clivia wonderland!



Seafont at Kei Mouth

PHOTOGRAPHS TAKEN BY FELICITY WEEBEN



C. miniata 'Appleblossom'

There are many places in KwaZulu-Natal that have outstanding *Clivia* populations, perhaps one of the best known is the Karkloof where many unusual and special specimens have been identified. Some of the better known and really outstanding ex-habitat plants which were found on private property are 'Fennel Picotee' and 'Lukes Special', 'Andrew Gibson', 'Lyn Janisch Parfait' and 'Gem's Hesper.'

In the Ikopo district a local farmer, Roly Strachan, was so entranced by the beautiful *Clivia* flourishing in the nearby forest, that he set about collecting them and planting them on both sides of the long driveway leading up to his house. A spectacular sight indeed and this turned out to be the saving of much of this colony as it was totally destroyed by woodcutters and truck loads of plants were chopped up and driven away.

Somewhat further north and slightly inland is a mountain known as the Bearded Man on the border between South Africa and Swaziland. Here the first natural interspecific known as *C. ximbicola* was found and is thought to be a cross between *Clivia caulescens* and *Clivia miniata*, both of which are found in this locality. The flowers of the *C. miniata* at the Bearded Man are interestingly different, being mostly spider shaped with a stand-alone star-shaped eye pattern.

Still further north and to the Zoutpansberg in Mpumalanga and also the famous God's Window area, *C. caulescens* flourishes. This is also a pendulous species and an epiphyte (a non-parasitic plant growing on other



Port St. Johns habitat

Photographs taken by Franny Weeden



C. gardenii

plants) and has the distinction of being the only *Clivia* sporting a stem which allows it to scramble over rocks and up tree trunks. A very rare yellow form has also been identified.



C. miniata 'Fennel Picotee'



Giant spider type *Clivia miniata*, Mt. Arara



Umtamvuna Wild Garden



Above: Lintamvuna Gorge and Nature Reserve

Right: *C. miniata* 'Lynne Janisch Parfait'



Above: Mzamba habitat

Right: *C. miniata* 'Andrew Gibson'



Photographs made by Felicity Whitten

C. nimbosa



Below: Bearded Man - *C. nimbosa* with star shaped eye

Below: *C. nimbosa* 'Gem's Hesper'



Roly's Garden

Photographs taken by Faustin Wleboh



PHOTOGRAPHS ON THIS PAGE TAKEN BY JAVI COLOM

Clivia mirabilis*Clivia mirabilis*

Then the big surprise! In 2002, a new form of *Clivia* was found in the south-western corner of the Northern Cape – far away from the usual easterly habitat. This is also a pendulous form, but with some interesting differences. This plant is extremely tough with an enormous root system and has adapted to much harsher conditions and is able to grow in sunlight though still preferring shaded conditions. It has long very hard brittle leaves and the pedicels (little stems holding the seed pod or berry) are a very bright red. Unlike other *Clivia*, the seed ripens in about four months as opposed to the nine-plus months required by most other species. This plant is aptly named *Clivia mirabilis*.

For those interested in gathering plants from the habitat, please be aware that indigenous plants may not be removed from the habitat without the requisite permit from the local authorities.

CLUB SHOWS 2017

Border Group Clivia Show

Photos by Glenn Miles



'377 Belje Bronze', 2nd, Bronze, Glenn Miles



'Bonanza 1st Pastel', First Runner Up, Glenn Miles



'Jackpot Seedling', 1st Bronze, Best On Show, Glenn Miles



Ella van Zyl, 3rd, Double Umbel, Glenn Miles



Show Table



'Euro Peach', 2nd, Double-Umbel, Uweilyn Mountfort



'Pudding & Pie', 1st, Bi-colour, Anne-Marie de Wet Steyn



'Lovely Inter',
1st, Interspecific,
Anne-Mare de
Wet Steyn



Multipeal, 1st,
Multipeal, Peter Miles

'Red Lady' x 'Toy's Red', 1st,
Red Class, Glenn Miles





'Star King', 3rd, Any Other Colour,
Glenn Miles



'Tipperary Peach', 2nd, Peach,
Judges Choice,
Anne-Marie de Wit Stoen

'Tipperary Peach', 1st Peach,
Second Runner Up,
Anne-Marie de Wit Stoen





'What a Beaut', 1st, Any Other Colour,
Peter Miles



'Who Can Tell', 1st, Versicolour,
Peter Miles

'Yesterday, Today and Tomorrow',
1st, Double Umbel, Glenn Miles



Cape Clivia Club Show 2017

By Felicity Weeden and photographs by Claude Felbert

If the 2016 Cape Clivia Show was a "Wow", the 2017 Show was better! The benches were filled to capacity with a "gaggle" of outstanding plants. A total of 395 plants were benched by 28 exhibitors.

It was good to see new names among the Major Award Winners and well done to Show Manager Chris Smit for winning Best Single Flower. Johan Kotze who won Best-On-Show, is a long time member and breeder and Old Timer Eric Heine's son in law.

The Major Awards were:

Best On Show – Johan Kotze

1st Runner Up To Best On Show – Gideon and Lorraine Van Zyl

2nd Runner Up To Best On Show – Gerrit Rohlandt

Best Peach And Blazer Trophy – Frans Mouski

Best Own Breeding – Felicity Weeden

Best Leaf Plant – Koos Bredenhand

Best Single Flower – Chris Smit

People's Choice – Eric Clur

Well done to Eric and Sheila Clur for winning People's Choice with a very unusual and attractive plant of Eric's own breeding.

The show was judged by Joubert van Wyk and Danie Pretorius from Gauteng and Dawid Botha from Port Elizabeth, Eastern Cape.



'Apricot' 2nd Runner Up, Apricot - broad tepal, Gerrit and Alet Rohlandt



'Kos se Bree Baar', Best Leaf Plant on Show, Class 92. Non variegated between 75 and 125mm, Koos Bredenhan

'No Name' Best Single Flower, Single flower class, Chris Smit



'Multitepal', Best on Show, Multitepal 7-9 tepals, Johan Kotze



Winners from left - Koos Bredenhand, Johan Kotze, Gerrit Rohlandt, Frans Mouski, Chris Smit, Gideon van Zyl and Felicity Weeden



'Yellow' 1st Runner up, Yellow
- Broad Tepal, Gideon and
Lorraine van Zyl

'Triumphant' Best Own Breeding, Own Breeding,
Felicity Weeden



'Eric's Choice', Peoples Choice,
Salmon - Broad Tepal, Eric & Sheila Cur



Peoples Choice

'Peach', Best Peach,
Wide Tepal Peach,
Frans & Elize Mouski



Eastern Province Clivia Club Interspecific Show 2017

By Dawid Botha and photos by Dawid Botha

The Eastern Province Clivia Club's interspecific show was held on 22 July 2017 at Sherwood Garden Centre, Port Elizabeth.

We did not get our usual number of entries as our dry weather and unusually mild winter did not help with the flowering of our interspecific plants. At our show the public are the judges and they decided who should take the honours.

The honours for Best Interspecific went to Carrie Kruger with her beautiful plant called C. 'Secret Desire'. The pink and apricot glow of those flowers stole our hearts (Fig 1.). 2nd Best on show went again to Carrie for a plant

with unusual characteristics called C. 'Golden Showers' with golden yellow arching flowers (Fig. 2). The best species was awarded to Glenn Miles with a beautiful C. gardenii (Fig.3). More pictures of interesting Clivia seen at mini show.

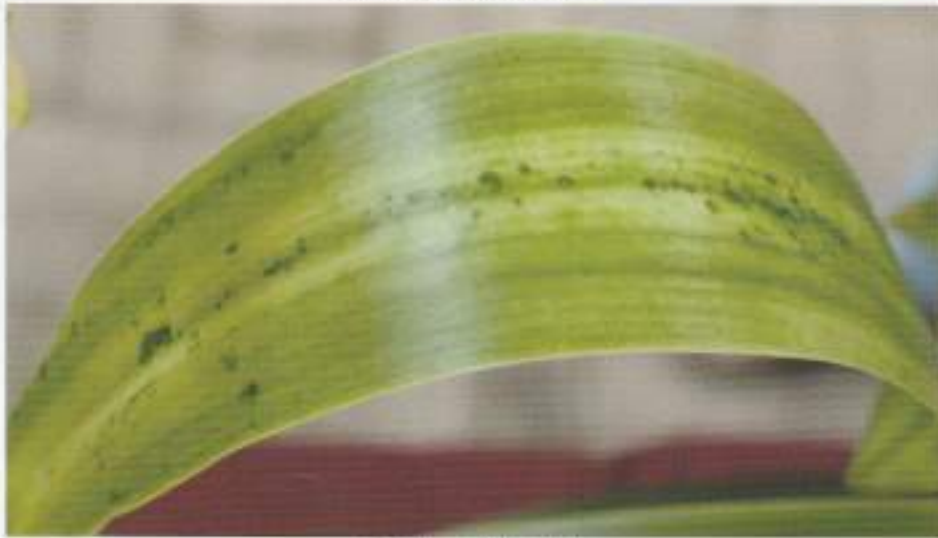
After the mini show Carrie Kruger gave us all an informative PowerPoint presentation on Interspecific hybridising and the successes she has had over the years. After the talk the winners were announced and the trophies handed over. The usual coffee and treats were served while members could trade plants and catch up on news or boasting with pictures on cell phones and promises of great flowers



Carrie Kruger 'Secret desire'



Carrie Kruger 'Golden Showers'



Carrie Kruger 'Galaxy' leaf



Above: Carrie Kruger 'Galaxy' flower:

Below: Marius Meyer interspecific





Toll Mastert interspecific



Wille Le Roux C. gardeni

Eastern Province Clivia Club Spring Show 2017

By Dawid Botha (Show Chairman)

Our show was held at Sherwood Garden Centre on 16th and 17th September 2017. This year our mild winter resulted in an almost absence of flowers in Port Elizabeth. We only had a small percentage of plants that were ready for the show from local club members. Our neighbours came to our rescue with loads of flowers in perfect condition.

This year we had 140 plants entered from 13 entrants. For the first time we had 122 classes to choose from. Some mistakes did creep in and we had unhappy campers. Those mistakes will be corrected for the 2018 show.

The panel of judges was Andre Swart (Cape Town), Mark Joubert and Dawid Botha. The learner judge in attendance was Marius Meyer. A major upset this year was that the judges did not go for the biggest umbels in the show, but judged every class on its own merits. Strangely enough that meant that the perfect umbel walked away with the Best on show and not the biggest plant. Using this method even the Runner-up best on show went to an Interspecific. Congratulations to our winners and great thanks to one and all who entered their plants for the show. Without you, there will be no show.

The winners' table was made up as follows:
 Best on Show: Carrie Kruger – *C. miniata* Pink
 Runner up to best on show: Carrie Kruger – Interspecific any colour in flower
 Second Runner up: Glenn Miles – *C. miniata* Red
 Judge's Choice: Anne-Marie De Wet Steyn – *C. miniata* Bi Colour



Best Beginner: Anne-Marie De Wet Steyn



Anne-Marie De Wet Steyn 'Pudding & Pie'

People's Choice: Carrie Kruger – Multitepal own breeding

Best Grower on show: Carrie Kruger

Best-leaved plant on show: Carrie Kruger – Akebono variegation

Best Beginner: Anne-Marie De Wet Steyn

The Best Grower on Show was determined by a point system for number of plants entered and a value allocated for every first, second and



Anne-Marie de Wet Steyn 'Pudding and Pie'



Carrie Kruger (Versi Colour)



Best Grower on show: Carrie Kruger



Carrie Kruger 'Akbona'

third prize won in each category. The grower with the most points won this trophy.

The Best-Leafed plant on show was awarded to the plant only categories, those plants without flowers but which enchanted with variegation or leaf form and growth patterns, including miniatures.

The Best Species was not awarded this year as the plants on display were not at their best, although they did get first in their class. I must

thank the individuals who brought species plants to the show as it showed the public how these plants look in nature and also served as an educational tool.

This year our sales tables would have counted as a second show area. Public and grower alike browsed through rows of *Clivia* and tried to spot that elusive idealised plant that you would like to take home. I could see some wives and husbands glaring at their



Carrie Kruger 'Sixteens Sister' – Best on Show



People's Choice: Carrie Kruger – Multitepal own breeding



Ebb Graham (light peach – Standard tepal)

spouses as the latter tried to hide that extra treasure explicitly forbidden due to restricted space or cost involved. The unusual plants were spotted first by the discerning eye and quickly sold.

I must take this opportunity to thank all the willing souls who helped before, during and after the show. It is your help that made it a success. The benching was a bit hectic as some time lines did not meet up or were not met at all this year. There was that individual who stepped up and helped smooth over the hitch points. Believe me we do appreciate the effort and time donated to make this show the success it was.

We exchanged judges with Cape Town this year. We thank the individuals who are willing to travel and judge at our show. We know that after judging there will be a group of individuals who question

every decision and some choices made. That's why we expect judges to stay for a second day and face the music. 80% of the time when choices are explained, exhibitors or the public walk away satisfied or with a lesson learned. That's why we have the shows in the first place. To brag and educate!

We had a lovely function on the Saturday night that was well attended. The show and the results were discussed over a glass of wine.

The show was a wonderful event and apart from the main attraction, we had a chance to catch up with old

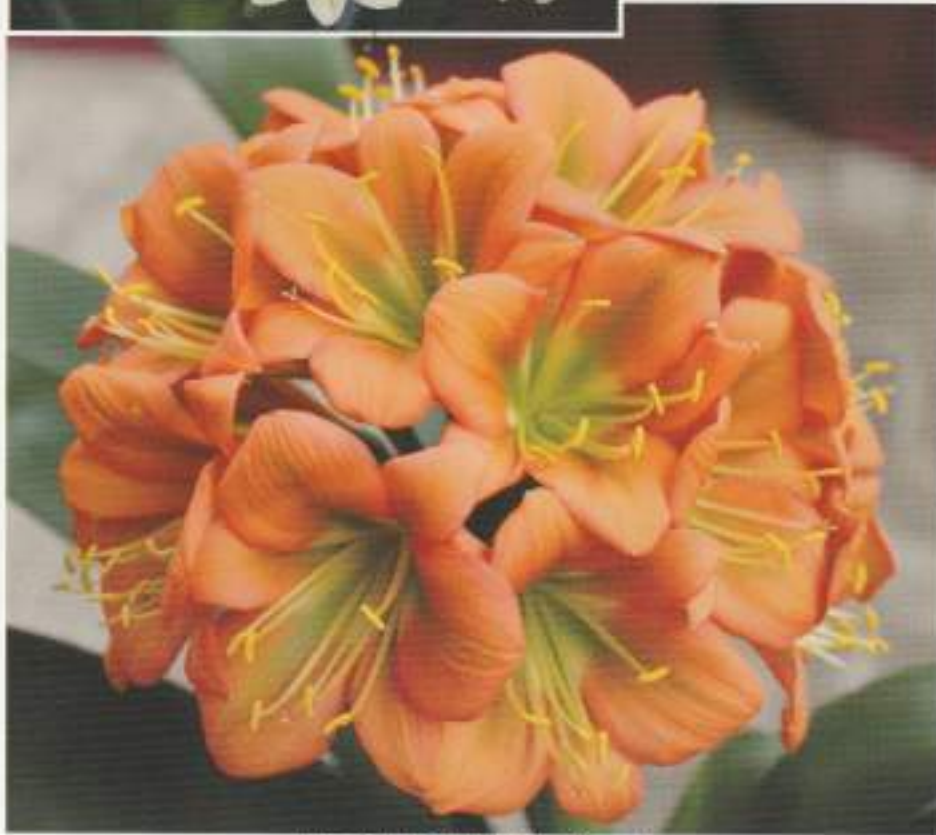
friends and make new ones. We are all looking forward to the next show with great anticipation.

Gideon Botha (*C. nobile*)



Carrie Kruger – Interspecific any colour in flower

Comments on some special plants that I personally found to be a notch above the rest must be shared with members, and these were a plant of 'Tol' from Johan Mostert, a perfect plant for a first time flowering Bronze. Willie le Roux exhibited an interspecific that would look great in any collection. Louis de Swardt had the palest Yellow broad tepal on show – it nearly looked white. R&N Jardin showed a rare Green *C. miniata* of own breeding.



Johan Mostert (Bronze first time flowering)



Glenn Miles:
'Emerald Eyes'
(multipeal, Ghost
with Green center)



Lester De Beer (light orange standard tepal)



'Little Red Hen' Second Runner up to Best on Show



Wille Le Roux (Interspecific)



Louis De Swardt (Yellow-Broad sepal)

More pictures of plants that were points of discussion amongst the visiting public are shown in this article).

Finally, we would like to thank Sherwood Garden Centre for making their facility available to us and the caterers for the excellent snacks provided. Also thanks to those that prepared meals, snacks and something to drink at our food corner. We would like to see you all if all goes to plan at our new show venue at Bay-West Mall in 2018.



R&N Jardin
(Green own breeding)



Free State Clivia Club Shows 2017

By David Fourie



Peach Interspecific



Red Interspecific



Show area



André du Toit with the Best on Show



Stefan Ferreira with Runners Up



Yellow Interspecific



1st Best on Show,
Andre du Toit



Broad leaf yellow section, Winner



Broad leaf peach section, Winner



2nd First runner up, Stefan Ferreira

Left: 3rd Second runner up, Stefan Ferreira

Bronze section,
Runner up



Bronze section, Winner



Multitepal section, Winner



Pastel green throat section, Winner



Versicolour section, Winner

First flower section, Winner



leaf section, Winner



yellow section, Winner

Garden Route Clivia Club Show 2017

By André Meyer, with photographs by André Meyer

The Garden Route Clivia Club annual *C. miniata* show was held on 23 and 24 September 2017 in the Outeniqua Primary School hall in George. The weather was kind and visitor attendance of approximately 800 over the one and a half days was marginally down on the previous year. The visitors had a keen interest in the 2 workshops on Clivia growing as well as buying the necessities for Clivia growing.

The local George newspaper, The George Herald, allowed us to place Clivia articles in the run-up to the show and reported on the winners as well. The local radio station, Eden FM, broadcasted two interviews with club committee members. The club was also fortunate in obtaining sponsorship from Santam (for hire of hall) and Old Mutual Private Wealth (for medals). Barcko, a local producer of bark growing medium, again provided some of their product free of charge for sale at the show whilst Leading Edge Signs changed some of our advertising material free of charge.

The plant/seed sales area was very busy and sales income nearly doubled year-on-year. An auction of special plants was conducted on the Saturday as part of a social function for exhibitors and sellers. The highlight of the auction was Nico Cloete's 12-leaf interspecific offset (Light of Buddha X 'Gems Golden Renaissance') fetching R11 700.

This was the first time that our club used the Clivia Society's standardised category list for show purposes. We had 121 categories available for entries and 37 of these categories received no entries. Our club members benefited from the clear descriptions for the categories and we encourage other clubs to use this standardised list so that practical experience can be gained to refine it.

24 (previous year 23) exhibitors with 309 entries (318 in the previous year) participated in



the show. The weather leading up to the show influenced both the quantity and quality of show entries, with many members' plants being in full bloom a week or two after the show. The judges for this show were Hennie van der Mescht (Free State), Liz Boyd (KZN) and Francois van Rooyen (KZN). Two of our club's learner judges participated in the judging process and the head judge provided feedback to the club committee on their performance/ability.

The club thanks all the exhibitors, sellers and volunteers that made this show the success that it was. The volunteers who work so hard are



often the unsung heroes of all the Clivia shows around the world – we salute you!

Best on Show Gold: Gerhard and Karen Faber
 Best on Show Silver: Ricky and Noelia Jardim
 Best on Show Bronze: Ricky and Noelia Jardim
 Best on Show Own Breeding: Karl Rost
 Best on Show Variegated leaves: Kemeels Buitendag
 Best on Show Non-variegated leaves: Willie Freund
 People's choice: Kobus and Ida Esterhuizen









Garden Route Clivia Club Interspecific Show 2017

By André Meyer, with photographs by André Meyer

The Garden Route Clivia Club annual Interspecific show took place on Saturday 5 August 2017 from 09:00 to 13:00 at the Garden Route Botanical Garden (GRBG). This was the 2nd Interspecific show that was open to the public and we attracted at least 150 visitors – a big increase on the previous year. We were blessed with a beautiful day after a severe storm on the Friday night. We had a number of people providing positive feedback about our venue (GRBG) and we thank the management of the GRBG for their excellent support. A number of our members commented that they had not visited the GRBG (for years or ever) and we truly hope that this mutually beneficial relationship will thrive in years to come.

We had 10 exhibitors who entered 44 plants compared to 14 exhibitors and 51 plants in 2016. The quality of the plants entered was very good. We had numerous reports of interspecifics that bloomed before the show or flowers that were not open in time. The timing of flower shows will always be a debate, but we need to fix a date in advance when we have the public involved.

The judging was done by three of our learner judges (Karl Rost, Louis de Swardt and Gerrit

van der Merwe) under the guidance of Dr Piet Theron – a great learning opportunity for them.

We had 6 sellers compared to 3 sellers the previous year. The sales more than doubled year-on-year. Some sellers commented that buyers were much more Clivia knowledgeable than those dealt with the previous year.

We wish to thank our sponsors for their support at this show. Evergrow donated some product and also had a stand at the show selling their products. The George Herald was very kind in publishing articles (both print and electronic) before the show, which helped our marketing efforts and assisted in educating the public at large about these wonderful plants.

Carrie Kruger took all three of the major prizes:

- Best on Show Gold: Offset of 'Secret Desire', an F2 interspecific bred from the famous 'Five Star'
- Best on Show Silver: 'Lingerie' an F2 'Cynthia Giddy' x (C. x *cyrtanthiflora* x 'Best yellow' Grp1)
- Best on Show Bronze: First flower bred from 'Ngome Yellow'

The public voted for their special plant and the People's Choice award was won by Louis and Elsa de Swardt.





Joburg Clivia Club Show 2017

By Glynn Middlewick

The Joburg Clivia Club present their annual show during the second week of September 2018.

As with many Clubs, the *Clivia miniata* show is the highlight of the year. Other *Clivia* species flower at various times during the year, but the *Clivia miniata* flowers are spectacular in September. The interest in the hiring of stalls was great in 2017. This shows a remarkable growth in the interest of commercial *Clivia* sellers. The number of 'Club' sellers was small. We appreciate the importance of an opportunity for a *Clivia* hobbyist to sell some of his or her plants.

Large advertising outlays are unaffordable in general. Use is thus made of social media. The nursery at our venue also promotes our show, as do some magazines. The usage of the same venue for the last 14 years has helped with the recognition of the venue by the public.

Any organizer of a show is worried whether there will be enough exhibits on the tables; whether the flowers will be open in time for the show. Every year we worry and then still manage to present a spectacular site for the visitors. 2017 was no different, the members presented a superb selection of flowers and foliage plants for the show tables. The show winner's selections, both in the flowering and foliage categories, met with most people's approval.

The attendance at the show was evenly split over the Saturday and the Sunday, with most of the serious selling take place on the Saturday. The Club wishes to thank all the members who participated in the organisation of the show. The sellers provided extra interest by supplying



Judges Felicity Weeden, Danie Pretorius and Francois van Rooyen



3rd, Multitepal of Pieter de Roux

a wide variety plants available for sale.

The winning entries in the flowering section were: First – Francois van Rooyen with yellow *Clivia*. The flower head was full, with flowers of darker yellow colour and recurved tepals. Second was a peach flower. This entry was entered by Corra and Dawie van Heerden.



2nd, Cora and Dawie van Heerden peach



1st, Francois van Rooyen yellow

This flower head presented a very attractive picture. Third best was an entry by Pieter le Roux. He entered a multitepal orange flower with a dramatic display of flowers with more than the normal six tepals.

Multitepal from Japan, Andre Swart



1st, Veriegated Pikkie and Elize Strumpher





Green winner, Sean Chubb

The foliage section had three superb examples of plants with leaves that did not depend on a flower for their beauty. The winner here was a well-groomed variegated plant displayed by Elize and Pikkie Strumpher. The second best was a plant entered by Anton Potgieter Sr. In third place was an entry by Hilton Atherstone.



Pink winner

Lowveld Clivia Club Show 2017

By Adri Pienaar

A very successful Interspecific and pendulous specie show was held at Nelspruit Garden Pavilion. It was held over two days (22-23 July) and was the first occasion that the LCC introduced and exposed the general public to these species and hybrids.

69 plants were entered and formed a spectacular display leaving the very appreciative public aghast at the diversity and intensity of colors, forms and shapes. Sales were brisk and attracted breeders from as far afield as KwaZuluNatal.

Best on Show was awarded to Paul and Sue Kloeck for their zigzag tricolor. Their Clivia

Kingdom's yellow robusta was first runner up while Neethling du Toit's peach interspecific was second runner up. Ian Radmore entered a very interesting caulescens where the outer whorl of tepals were considerably shorter than the inner whorl.

The miniata show was again held at the Lowveld National Botanical Gardens but was dove tailed with a broader indigenous plant sale including cycads, succulents etc. This led to a greater number of feet through the door.

Best on Show was awarded to Neethling du Toit, First Runner Up to Gideon Bean and Second Runner Up to Ian Radmore. Clivia Kingdom and Henriette Bean shared the Judges Choice.



Multicolour 'Zig Zag'



Chris Holzhausen's Second Runner-up



Kwa-Zulu Natal Clivia Show 2017

By Alfred Everson (Jnr)

It is with great pride that I am able to write the following article.

On the 16th of September 2017 the Newcastle Interest Group hosted the first ever KZN Clivia Club show in Newcastle.

It was a mammoth task to take on, considering the small number of members that belong to the Newcastle Interest Group. As far as we are concerned, it was a great success, but then how does one measure success?

Firstly, when Newcastle Interest Group was formed in 2014, we requested the KZN Clivia Club Committee's approval to accept our proposed constitution.



At that meeting the following question was asked: "What do we, the Newcastle Interest Group, expect from the KZN Clivia Club?"



Judges Choice: Breeder, Grower and Owner H Howard

Not being fully prepared for this question I replied, "We wish to be a part of the KZN Clivia Club and would like to have an opportunity to host the KZN Clivia Show".

These were some of the answers given to the committee at that time.

- We were successful in voicing our point of view as an active interest group in KZNCC.
- We instigated and witnessed a change of opinion taking place and could see we were working with a committee that was willing to give us a chance.
- Furthermore, we had 90% of the KZNCC Committee members attending the Show.
- We presented a completely new layout of the exhibit plants on show and also the Best on Show display table.

For the first time ever, the KZNCC awarded cash prizes for:

1. Best on show, First Runner Up and Second Runner Up on Show, as well as Best Novice and Best Junior on Show.
2. A complete new class list was formulated



Winner of Picotee Section, 'Iceberg Picotee'. Owner H Howard

to fall in line with the Clivia Society who is attempting to standardize the showing criteria across South Africa.

3. A new system of having 2 groups of judges was introduced to enable on time public viewing of the plants.
4. An updated and automatic electronic scoring system was developed to calculate Most Points.





5. Leaner Judges were trained.
6. New members joined NCIG bringing our total current membership up to 13.

A total of 108 plants were entered and the Judging panel consisted of Brian Tarr (Head Judge), Paul Kloeck, Piet Theron, Karl Rost, Johnny Clark (Leaner Judge) and Louis Lotter (Leaner Judge).

Francois van Rooyen once again, walked away with the Best on Show award - with a plant he entered in Group 3 Orange. (As Francois was unable to attend, Mrs Middleton accepted the award on his behalf.)

1st Runner Up was Piet & Riana van Wyk with a plant that was entered into Group 7 - Light Yellow.





Piet and Riana managed to take 2nd Runner Up as well with a plant that was entered into Group 18 - Bronze/ Brick with Green Throat.

Best Novice on Show was Juanita Jansen van Rensburg with her exhibit that was entered into Group 44 Striata Variegated Leaf without Flower.

Only one junior, Alfred Everson IV, entered. He was awarded Best Junior on Show with a plant he entered into Group 42 Broad Leaf without Flower.

Best Foliage plant on Show was awarded to Felix Middleton with his exhibit, which was entered into Group 48 Miniature without Flower. (Unfortunately, no photo is available). Congratulations to Alf Everson who was awarded Most points on Show. His entry of 36 plants accumulated him total of 57 points. Well done Alf.

Two Primary Schools participated in the Creative Art Colouring Competition. This was

Place	Exhibitor's Name	Total	Plants Entered
2	Louis Lötter	32	15
3	Felix Middleton	31	12
4	Henry Howard	28	10
5	Glen Boyd	19	6
6	Francois van Rooyen	17	5
7	Roshan Neeraj Dheochand	14	5
8	Piet van Wyk	12	3
9	Alfred Everson Jnr	7	4
10	Val Thurston	4	1
11	Belinda Ellor	2	2
12	Leon van Rooyen	2	1
13	Paul de Klerk	1	2

well supported and the prizes were awarded to the pupils at the school, during assembly.

After the prize awarding the learners were treated to a demonstrated on how to transplant their newly-owned clivia. They all really enjoyed getting their hands dirty.

In my opinion, the Newcastle Interest Group and all those people who assisted can be very proud of the many successes achieved. I have received numerous compliments and words of praise from all who attended the show. Thanks to you all for your assistance in making this Clivia Event a great success. A special thanks to all our sponsors, whose generosity will be documented at the AGM function.

Tannie Val, you are a 'Lady in a thousand' and your ideas and coaching in the past year helped me tremendously. Thank you for your time and timeously response to all my questions.

Northern Clivia Club Show 2017

By *Marlene Topham*



First place: Interspecific Show



Martens Erasmus



Second place

Karel Stanz taking
photographs



Third place



Northern Free State Clivia Club Show 2017

By Ben Nel, photographs by Chris Nel

The annual *Clivia miniata* Show was held at the Toronto Hall, Welkom on the 9th and 10th of September.

Judging by Willie Wesselman took place on Friday the 8th in the afternoon.

The Saturday and Sunday the show was well supported by *Clivia* enthusiasts.

Congratulations to our trophy winners. I would like to thank one and all that entered their plants for the show.



Above: Best plant on Show

left: 1st Runner Up



Without you there will be no show.

Trophy winners:

Best on show: Stefan Ferreira

1st Runner up: Stefan Ferreira

2nd Runner up: Stefan Ferreira

Most Points on show: Stefan Ferreira

Best on show leaves: Andre Steyn 'Miniature Chinese Daruma'





2nd Runner Up



Stefan Ferreira with his winning plants



Overberg Clivia Show 2017

Text and photos by Felicity Weeden

The Overberg Show was really excellent this year. There were 141 plants exhibited by 9 exhibitors and the benches were filled to capacity, with a few exhibits having to be displayed on the floor.

We were blessed with good weather and had 467 visitors, nearly three hundred more than the previous year, which was most encouraging. This was put down to good advertising, so thanks to Andre and Sandra du Plessis (local newspapers) and Etienne Kriel (radio).

The winners this year were:

Best on Show – Carrie Kruger

1st Runner Up – Felicity Weeden

2nd Runner Up – Andre and Sandra du Plessis



Just B: Peoples Choice, Specimen Class; Etienne and Analene Kriel



'Bicolour' Second Runner Up,
Bicolour, Andre Du Plessis



Andre's Broad Leaf, Best Leaf Plant on Show, Leaf longer than 250 mm, between 75-99mm wide, Andre du Plessis.



Andre's LOB, 1st Runner Up Leaves, LOB Class, Andre du Plessis.



Andre's variegated, 2nd Runner up leaves, Variegated Leaf, Andre Du Plessis.



Jungle Fire, Best On Show, Bronze, Carie Kruger.

- Best on Show Leaves – Andre and Sandra du Plessis
- 1st Runner Up Leaves – Andre and Sandra du Plessis
- 2nd Runner Up Leaves – Andre and Sandra du Plessis
- People's Choice – Annalene and Etienne Kriel

This is only the third time Andre and Sandra have exhibited and all credit to them for winning four of the six main awards.

Other first timers Etienne and Annalene Kriel benched 6 plants and went home with 6 awards including People's Choice with a spectacular yellow specimen plant and Willem Fourie who also exhibited for the first time and won two Silver awards for leaf plant exhibits.

Well done people!



Nome Yellow First Winner
Up. Nansos Petal Yellow,
Felicity Weedon



Winners Overberg Club, from left: Sandra du Plessis, Andre du Plessis, Carrie Kruger and Felicity Weedon

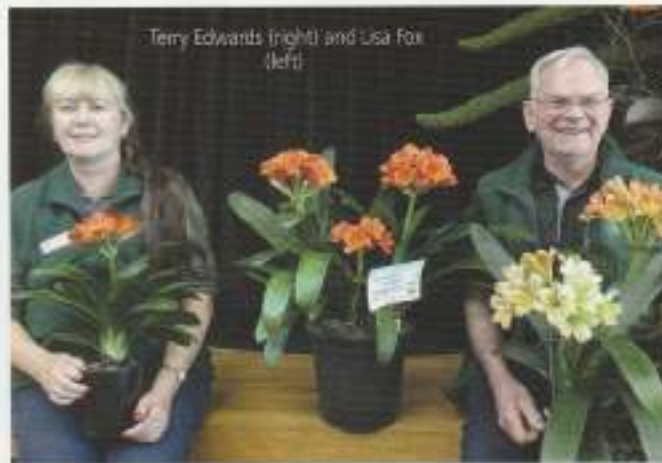
Melbourne Clivia Group - Clivia Expo 2017

By Michael Barrett

The Melbourne Clivia Group held its seventh annual Clivia Expo on the Saturday, 23rd of September 2017. The one day event was held at St Scholastica's Community Centre in Burwood, for a second year, and the venue is booked for this coming year's expo.

The flowering and foliage plants are displayed on large round tables, often with one exhibitor having an entire table. There were 111 plants from 16 exhibitors. Plants were brought from interstate by South Australian member, Alan O'Leary, and imported Japanese plants were displayed by Lisa Fox. The visiting public were delighted by the presented feast of colours Clivia, with bronze and peach being well admired.

The expo continues the tradition of a People's Choice award for best plant on display. It came as little surprise to many members that a most unusual chimera effect plant was chosen as the winner of the Kevin Walters Memorial Trophy for People's Choice. Terry Edwards bred and displayed Clivia 'Westleigh Wonder'. Not only did it have the umbel with different colour flowers (both green and a muted bronze), it had an offset with darker bronze flowers. Runner up for the Peoples' Choice was 'UQ', a small compact plant with bronze flowers imported from Kazumi



People's Choice winner - 'Westleigh Wonder'

Hattori in Japan, owned by Lisa Fox. Third place went to a 'Florida White Lips Bronze' owned by Terry Edwards. This impressive plant had three umbels of distinctive flowers.

A silent auction created another interesting aspect to the day. Thank you to Hugh Williams



Plant display



Floral art created by Michael Barrett

As in the previous years, many first time visitors were keen to learn about pollination and propagation from seed. Free seeds were available for those keen to go home and start growing Clivia. Others took the 'quick' method to have a beautiful flowering plant and bought very reasonable priced plants from individual sellers and a combined members' trading table. Once again our superb catering created a relaxed and hospitable environment to spend time catching up with fellow Clivia enthusiast.

To see the plants on display, please visit our website and view the gallery.

<http://www.melbournecliviagroup.org.au/>

A demonstration by Helen Marriott

from South Australia for the incredibly generous donation of the two lots, a 'Hirao' and a 'TKO'. The auction raised in excess of \$1000. Congratulations to the successful bidders on winning such impressive plants.



PHOTOGRAPHIC CONTRIBUTIONS

Clivia – A wider picture

By Ian Coates

At school I seemed to differ from others. My fellow pupils all wanted to be good at everything, whereas I strived to master just one. My point, as I argued on the debating team, was that to excel in one subject you would inevitably gain knowledge of others, thus becoming both a master of one subject and a jack of all trades. So I believe it is with plants, and *Clivia* are an excellent example. If you view *Clivia* as just a simple plant to sit in your garden or on your windowsill, then I hope you will soon look further.

I am writing here of long before the internet and mobile phones. All I knew was the *Clivia miniata* which I had and that the plants had a Victorian history in England. I therefore spent what time I could travelling around England's old Stately Houses. This taught me not only about English geography but also grand architecture and the aristocracy. I also found

that most Stately houses did indeed still have a *Clivia* which had been considered essential decoration in Victorian times. Mostly orange *C. miniata* but the occasional other species or a yellow which I found most exciting. On one such visit to Bodnant House in North Wales, I was given a *C. miniata* 'Bodnant Yellow' which has quite a history and has to be one of my favourite plants. It was an offset from one of the original two yellows brought into England in the 19th century.

I discovered that *Clivia* are not just a pretty plant for the garden or windowsill but a genus of six species, all of which interbreed. What a challenge! You not only have the more flamboyant species, *C. miniata*, where you can cross pollinate various colours etc, but five other species which you can cross both with themselves and with *C. miniata*. Just imagine the results you can get. In the process you will



Leaving Mirabilis country. The view towards Vänrhäysdorp

Ian Coates has kindly made his extensive collection of *Clivia* photographs available for the Yearbook, from which we have selected the following for the enjoyment of fellow enthusiasts.

THE ENVIRONMENT

Five of the *Clivia* species are found in eastern South Africa, from *Caulescens* at high altitudes in the far north through *Miniata*, *Gardenii* and *Robusta* to *nobilis* on the beaches in the south east. *Mirabilis* is in the far distant south west.



Ian in the morning mist in *Mirabilis* habitat.



Mirabilis growing on the sand dunes near Kai Roet.

learn of various genetic dominances. Not just with flower shape and colour but also with the added bonus of leaf variegation. All subjects can be studied in depth scientifically or merely observed visually from your results. There is something for everybody at every level. Because of the efforts of others, even that window sill plant has changed out of all recognition since I started collecting over 50 years ago.



The morning call. *Hackelia* flying over.



Clivia flowering by the Qwaninga river.

THE HABITATS

Clivia are generally found in light to medium shade in amongst a wealth of companion vegetation. Populations occur on valley bottoms, hillsides and rocky outcrops, often epiphytically on trees or lithophytically on boulders.

The habitats are found generally in higher rainfall areas, but Clivia are surprisingly drought resistant, thanks to water retention by their thick roots. Only *Robusta* tolerates poor drainage.

In nature's beautiful settings, Clivia warrant close up enjoyment.



Cauliscent growing on trees up Marieskop



A stony habitat

To me it appears inevitable that one would also want to learn more of the plant's history and natural habitats. Having owned my first *Clivia*, a *C. miniata* 'Lady Holford', as far back as 1965, it was then the Conference over forty years



Nobilis preferring the tree to the ground.



later in 2006 before I could afford the time and money to travel to South Africa and visit some of those habitats. I can remember the excellent post conference tour of that year, seeing my first plant grown in natural habitat and kissing the ground where it grew. I would still do that today and am grateful that I have now been able to do it for each of the species.

Left: A high up Ngome.



Red *Caulescens* at over 1,850 metres altitude.



Caulescens with 2 metre stem.



Yellow Nigome in habitat.

Having been to several habitats, I became interested in the pollinators. With flying by so relatively fast, how did they know where to find the pollen? This I learnt was because each *Clivia* flower gave them markers through their anthers. The relevant insects view ultra violet and this is absorbed by the flower pollen, which therefore appear black to them. Not surprisingly, this led me to UV photography which showed me that the markers were quite different for other plant families and genera.

I was naturally curious after visiting habitats of several different species to learn why they were so located. Is it the soil? Is it the weather? Is it associated plants? There are so many aspects to investigate. Which species came first? Why is *C. mirabilis*, at around 1,000 kilometres further west, such a distance from the other species? Since all the species interbreed, why, when *C. miniata* and *C. nobilis* often grow closely together, are there not numerous interspecific crosses in the habitats? There is so much to learn and not all is simply available. For instance, I have experienced more rainfall in one day in *C. mirabilis* country than

the records show for the whole month. Couple this microclimate with the fact of regular mists and you will see that the moisture available for the plants can be much more than it appears at first from rainfall records.

Clivia are not just about the habitats of the various species or, indeed, merely about South Africa. They are now grown in many countries around the world and visiting them one does not learn just more about the diversity of the plants but also about World cultures; the fascination of such places as Japan, China, New Zealand, Australia and America to mention just a few. All growers seem to be such interesting and generous people.

Closer to home for me are the plants in the Atlantic islands, including Madeira and the Canary Islands. A garden was created in the largest of the Canaries, Tenerife, in 1788 to acclimatise plants from the tropics on their way to Europe and especially Spain. Shortly afterwards a ship called in for supplies on its way to Spain from southern Africa. The Garden of Acclimatisation persuaded the Captain of the ship to part with an example of *C. miniata* and



A handsome dark Nobilig in habitat.

C. x cyrtanthiflora from his cargo. The islands now have an abundant supply and, as far as is known, all are descended for those original plants of 130 years ago. I have been studying them for over fifty years and, in that time,

have spotted just a single variegata and have only recently seen my first cross there. These islands have a lovely climate varying from 14° centigrade on a winter's night to 25° C on a summer day. The annual rainfall is around



Above: *Mniata* in habitat at Umfarwuna. Below: Ever the professional. The author getting the lighting right.



AFTER THE CONFERENCE, A VISIT TO CAULESCENS IN HABITAT?

As part of the 2018 conference activities, James Abel is co-ordinating self-drive visits to iconic *Caulescens* habitats on the eastern escarpment.

He suggests that on Monday, 10 September participants drive (+/- 4.5 hours) to Graskop and spend the afternoon visiting the renowned Gods Window and The Pinnacle, about 15 km from the village. For the night, reduced tariffs for enthusiasts have been arranged at the Graskop Hotel where all previous tours have enjoyed the hospitality. On Tuesday morning visit the new Graskop lift, descending from the cliff top into the subtropical forest amidst masses of *caulescens*. Although a bit early for peak season, there will be some early *Caulescens* flowers to admire, as shown in Ian's photo.



On Tuesday afternoon participants can decide to return to Johannesburg, extend their stays in the scenic mountains or spend a day or two in the Kruger National Park, where among Africa's best in wild life they may see all of the Big Five (elephant, lion, leopard, buffalo and rhino).

If interested, email us with any queries and for a details:
James and Connie Abel, jcabel@absamail.co.za.

280mm and gardeners will need to water their plants in the summer months. The soil is slightly acidic and very free draining, consisting of broken down volcanic rock.

As in all walks of life, amongst *Clivia* enthusiasts there are some bad eggs. One classic example regards the 'Q' strain of plants. This beautiful variety was found near a river bank



One of the Big Five.



UV picture showing what the pollinators see.

in East London. With the appropriate permissions, seven specimens were collected for Kirstenbosch Botanic Garden. The location was kept secret and the plant protected and yet many collectors had specimens in their collections before Kirstenbosch sold any to



Enthusiasts all. A habitat tour.

the public. I wonder how? When I visited the site some years ago, there was not a single 'Q' *Clivia* plant remaining in the area. Indeed, there was not even a *Clivia* of any kind within 50 metres of the site. All had been removed by 'collectors' just in case any plant might have some appropriate 'Q' genes. A further sad example is *C. mirabilis*. Location of the sites was jealously guarded for some time. Since they became known, a farmer returning to his remote home met a truck travelling away. Upon being challenged, it was found to contain a load of plants taken from the habitat on his land. Such plants are, of course, firmly protected by the South African authorities and CITES. There are still only about four known areas of *C. mirabilis* habitat and even honest enthusiasts are now, understandably, not welcomed by the landowners. And then many of you will have seen the blue flowering *C. miniata* seeds for sale on eBay. With some adjustment by Photoshop! Even the pollen has turned blue. Did you buy any?

If you are lucky enough to get out into the *Clivia* world, you will also have the opportunity to extend your language skills: Afrikaans, Spanish, Japanese etc. I have learnt a few words although I can never differentiate between a pin, a pen, a pun and a pan in New Zealand.

As a photographer, I have also had the

opportunity to extend my portfolio. I hope the following pages will encourage you to travel also.

After a hard day in habitat, it is so rewarding discussing matters with ones colleagues – even if there is a power cut!

I could not have done any of this without the help and generosity of enthusiasts around the World. Thank you everybody.

Following the Conference, I was fortunate to take a coach tour organised by James Abel. Apart from the wonderful camaraderie and sharing of information, we visited such sites as God's Window, Mariepskop and The Bearded Man where we viewed *C. nimbicola*, the first known naturally occurring interspecific *Clivia* also taught me about wildlife - baboons and leopards in habitats to the 'Big Five' in the Kruger National Park. I assumed on a *Clivia* tour that the 'Big Five' would be *Miniata*, *Nobilis*, *Gardenii*, *Robusta* and *Caulescens*. (A bit early for *Mirabilis*). How wrong I was. Rather lion, elephant, leopard, rhinoceros and buffalo. But it rather proves my point. Try to learn everything about *Clivia* and you will learn all sorts of other fascinating things.

If you would like to continue your *Clivia* adventure, or even get started, an excellent way would be to join the self-drive group of delegates going to the eastern escarpment on the day after the Joburg *Clivia* Club show.

PHOTOGRAPHIC CONTRIBUTIONS



Aart van Voorst, SCU16 with Maxima



Florida White Lips, Henry Howard



Minista '777 Genie', Carrie Kruger



'Pink Radiance', Carrie Kruger

PHOTOGRAPHIC COMPETITION

MINIATA SECTION



Miniata 1st, James Dearing' x ('Vico Yellow' x 'Vico Gold'), Helen Marriott



Miniata 2nd, Akebono Multitepal, Helen Marriott



Miniata 3rd, 'Crown Prince', Carrie Kruger



Miniata Special mention, Felicity Weedon



Minnota Special mention, 'Bertie's Pink', Glenn Miles



Minnota Special mention, 'Emerald Eye', Glenn Miles



Mivata Special mention, 'Felicity Wenden'



Mivata Special mention, 'Mookie', Glenn Miles



Minista Special mention, Nakamura Multitepal, Mike Riska



Minara Special mention, Solomone Yellow, Malcolm Shrimp



Minata Special mention, 'Sixteens Sister', Carrie Kruger

INTERSPECIFIC SECTION



Interspecific 1st, 'Jingle Bells', Camie Kruger



interspecific Special mention, Felicity Weeden



Interspecific Special mention, Huntington Interspecific, Malcolm Shrimplin



Interspecific Special mention, 'Orange x yellow' x 'Dream', Mike Riska



Interspecifics 2nd,
(*C. mixata* x *C. caulescens*) x *C. mixata*,
Helen Marriott



Interspecifics 3rd, *C. caulescens* x *C. mirabilis*.

SINGLE FLOWER SECTION



Single flower 1st, 'Pink Crystals', Carrie Kruger



Single flower 2nd, 'Katie D', Helen Marnott



Single flower 3rd, 'Star Green Destiny', Carrie Kruger



Single flower Special mention, 'Tadal' x 'Hanyao', Miki Riska



Single flower, Special mention, 'Honaye', Helen Marriott

PENDULOUS SECTION



Pendulous 1st, John Hunter

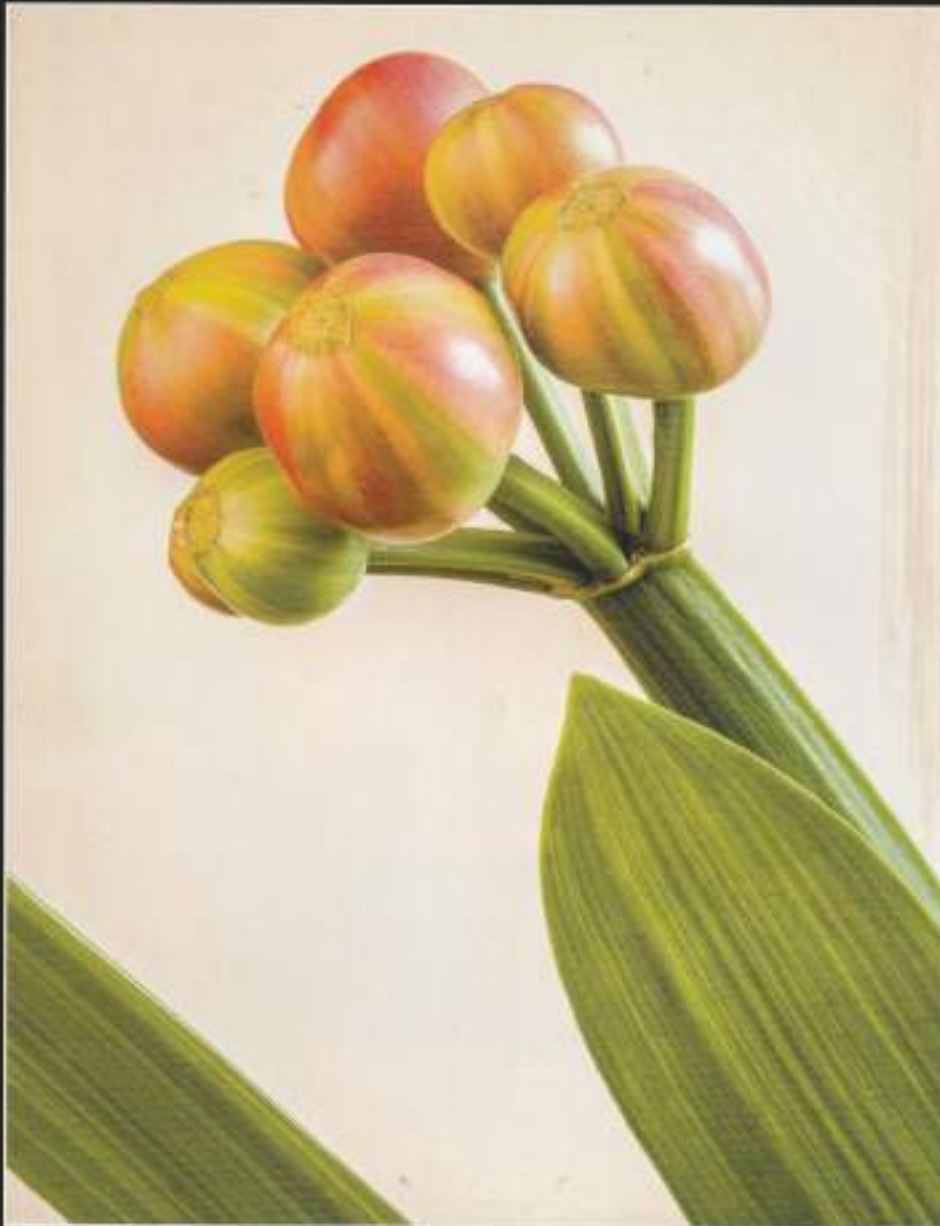


Pendulous 2nd, John Hunter



Pendulous 3rd, Felicity Weeden

OTHER



Other, 1st, Variegated berries and leaves, Helen Marriott



Other 2nd, "Mary Helen" in frame with berries; Helen Marriott



Other Special mention, Plate of Interspecific flowers, Helen Marriott



Other Special mention, Polrestet, Andre du Toit



Other 3rd, 'Tana's Green', Carrie Kruger

MESSAGE FROM THE EDITOR

I would like to thank all the people who have played a role, in whichever way, in helping produce the two Society publications over the past years: including but not limited to Glynn, Sakkie, Helen, Graig, Jacky, Claude, Sue, Marlene and Christo, Fréda, Annetjie, Anita and all the article contributors. Thank you for your time and interest in our publications.

A great thanks goes out to the four judges that judged the photographic competition this year: Ian Coates, Gordon Fraser, Claude Felbert, and James Haxton. Comments from the judges included: "A common problem was trimming the image. In many cases the flower head was complete apart from cropping off leaf tips or stamens."; "...images that do not conform to the rules [such as:] inclusion of watermarks and images that were too small etc."; "With few exceptions the lighting was much too flat so you could not visualise the depth of the flower."; "lots of poorly taken images that are soft and have terrible backgrounds but some good ones."; and "I was pleased to see attention had been given to our comments about composition..."

I would like to thank Glynn, our Chairperson of the Society, for his support over the past years.

It has been an honour to serve Clivia as editor of the Clivia News since 2012 and also producing five Yearbooks. I step aside with a heavy heart, as I have enjoyed being editor of the Society's publications but know that the time has come for me to focus on other pursuits. The publications will benefit from new ideas and input, to be provided by the next editor. I have achieved the objectives I originally set for myself as editor and I am grateful for the opportunity that I had to make this contribution to the Society.

Be kind and generous!

Joubert van Wyk

PUBLICATIONS EDITOR

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