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CLIVIA NEWS

Newsletter
of the Clivia Society

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CLIVIA NEWS



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The Clivia Society www.cliviasociety.org

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 whom also have their own Clivia Clubs. An annual yearbook and three 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 on the inside of the back cover.

The objectives of the Clivia Society

1. To co-ordinate the interests, activities and objectives of constituent Clivia Clubs and associate members;
2. To participate in activities for the protection and conservation of the genus *Clivia* in its natural habitat, thereby advancing the protection of the natural habitats and naturally occurring populations of the genus *Clivia* in accordance with the laws and practices of conservation;
3. 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;
4. 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;
5. To promote interest in and knowledge of the genus *Clivia* amongst the general public; and
6. To do all such things as may be necessary and appropriate for the promotion of the abovementioned objectives.

More information on the Clivia Society available on
www.cliviasociety.org

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ADVERTISEMENTS

WILL ANYONE WISHING TO ADVERTISE OR WHO KNOWS OF POTENTIAL SPONSORS OR ADVERTISERS FOR THIS PUBLICATION PLEASE COMMUNICATE WITH SAKKIE NEL IN THIS REGARD.
SEE PAGE 33 FOR CONTACT DETAILS.

The Clivia Society Newsletter started as a black and white news-sheet dated July 1992, numbered Volume 1 Number 1, called 'Clivia Club'. It formed a means of communication for people interested in the plant genus *Clivia*. It was edited/written by the late Nick Primich with issues respectively 3, 5, 8 & 5 during the first 4 years dated with the month of publication.

The frequency was fixed on four annually issues with Vol. 5 No 1 of March 1996.

The date changed to the southern hemisphere seasons with Vol. 8 No 1 of Autumn 1999. The name changed to 'CLIVIA CLUB NEWSLETTER' with Vol. 9 No 1 Autumn 2000 with full colour photos on the cover pages. Another name change to 'CLIVIA SOCIETY NEWSLETTER' came with Vol. 10 No 4 Summer 2000, and in 2005 monthly dating was reinstated.

CLIVIA NEWS is the continuation of this series.



EDITORIAL

An interesting era awaits: For the first time in the history of our publications, the *Clivia* News will be going 'electronic', as was decided at the most recent AGM of the Society. In future, the *Clivia* News will be distributed to members in PDF format, followed by the printed version which will be sent out in hard copy. Electronic publication and distribution give members early access to the content of the *Clivia* News, significantly ahead of the distribution of the printed copies.

With the quadrennial Society Conference around the corner, excitement is rapidly building. A great opportunity to see old friends from previous conferences and from across the country and world. The Society Conference provides a platform for us to listen to presenters that have invested and taken the time to develop their thoughts and ideas through observations over many, many years. What a privilege it will be to listen to all the knowledgeable speakers that have been lined up. I certainly can't wait!

Let's make a concerted effort to keep our love for *Clivia* 'clean', by not allowing greedy and ill-mannered people, those that have not been brought up well, who make it uncomfortable for the majority of us, to behave unethically. These individuals, through their disregard for ownership, steal plants, seed or pollen from others. Theft is unacceptable and criminal behaviour. Shame on everyone that has ever stolen from their fellow enthusiasts and lovers of *Clivia*. There is nothing in this world that one can desire so badly that one is willing to stoop so low as to be a thief of the treasured possessions of another person!

Had Luke Skywalker known *Clivia* like we know *Clivia*, he may have said: "May the *Clivia* flower well for you".

Joubert van Wyk
Momentary Editor

P.S. Cut-off dates for submissions:

Clivia News 2018/2019 No. 2 - 15 November 2018;

Clivia News 2018/2019 No. 3 - 15 January 2019;

Photographic Competition entries - 15 February 2019; and

Year Book 20 - 15 February 2019.



Front cover – 'Gem's Galactic Sunrise'



Back cover – 'Carrie Kruger's Over the moon'

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CLIVIA CLUBS AND SURROUNDS

The Garden Route *Clivia* Route*By Carrie Kruger*

The Garden Route is home to many serious *Clivia* collectors and breeders. The *Clivia* Route was created in 2013 to invite *Clivia* collectors who visit the Garden Route, to come and view these extensive collections. We have just updated the *Clivia* Route, adding new breeders to the list. We have many top breeders in our *Clivia* club and a visit to the Garden Route is a must, during flowering time.

The route stretches from Port Elizabeth down to Mossel Bay. Among these collections one will find top show winning, as well as very rare and unique plants. To visit one or more of these growers, please see the attached list of the members' names, contact numbers and a short description of their collections. Visits are strictly by appointment only. ▼



Gerhard and Karin Faber BOS 2015



Cameron Peach Jardim Clivias



'Peach Green' - Karl Rost



'Sixteens Sister' BOS EP 2017 Utopia Clivias

THE GARDEN ROUTE CLIVIA ROUTE



Randolph's "Emerald Star"



Ricky and Noelia's David F1



Utopia's Star Green Destiny

The Garden Route is home to many avid Clivia collectors. The Clivia Route was created in 2013 to invite other Clivia growers who visit the Garden Route, to come and view these extensive collections. We have many top breeders in our Clivia club and a visit to the Garden Route is a must during flowering time. To visit one or more of these growers, please see the annexed list of members' names, numbers and a short description of their collections. Visits are strictly by appointment only.



Gavin Clark's Andrew Gibson



Nico Cloete's White Lips IS



Faber's Love Story



Kobus Kearney Peach



Faber's Star's and Stripes



Utopia's Versi colour



Randolph Young's Multi petal



Kobus Kearney's Bronze



Judy and Mark Dixon's red

The Garden Route Club consists of a good number of members with very special collections and the following members are willing to open their gardens and share their collections with visitors on appointment.

MEMBER:	Contact no:	WEBSITE/ADDRESS:	DESCRIPTION:
AREA: 1	KLEIN BRAK		
Karl Rost	0828874429	Welgelegenslot 2, Fraai Uitsig, Klein Brakrivier	A very good mixed collection of a large range of colours
AREA: 2	GROOT BRAK		
Nico Cloete	0823069212	124 Sandhoogte Road, Groot Brak Rivier	A collection of quality plants from trips, both local and overseas
Ricky and Noelia Jardim	0842993170	Kleinplaas 10, Groot Brakrivier	A collection of show class peach, bronze, orange and red clivia
AREA: 3	GEORGE		
Randolph Young	0727685688	19 Searle Street, Blanco, George	A mixed collection
Piet Claassen	0847831560	10 Merriman Street, George	Peach, pastel, yellow, burnt orange, green throats and multi petals
Gerhard and Karen Faber	0834120011 0832765230	54 Arbour Road, Glen Barrie, George www.cliviacouture.com	Avid breeders and collectors of rare, unique and diverse clivia.
Kobus Kearny	0827858279	15 Albert Street George	A good selection of peaches, pastels, green throats and yellow greens
Gerrit van der Merwe	0829071132	13 Newton Street, George	Mixed collection
AREA: 4	SEDFIELD		
Carrie and Luke Krüger <i>UTOPIA CLIVIAS</i>	0833431288	www.utopiACLIVIAS.co.za 20 Crane Walk, Sedgfield	Specialising in the most unusual and rare colours, interspecific hybrids as well as Japanese Hattori plants.
Judy and Mark Dixon <i>LAKELAND CLIVIAS</i>	0723906667 0822135931	Dix-Inn, Wolwerivier Rd, Rondevlei, Sedgfield	A wide range of clivia growing in the indigenous forest
AREA: 5	KNYSNA		
Louis de Swardt	0832711952	10 Eagle's Way, The Heads, Knysna	Collection of mainly peach and Bronze green throats as well as broad and variegated leaf types
Gavin Clark	083 7777 830	P95, Thesen Island, Knysna	Mixed collection consists of plants bought on auctions since 2006, Habitat plants and Chinese imports
Area:6	Port Elizabeth		
Johan Basson	082 8911 545	Plot 265, Kragga Kamma Road, Port Elizabeth	A mixed collection



Flowering time at Utopia Clivias



Garden Route Clivia Show

CLIVIA SOCIETY

From the Chair

Glynn Middlewick

The Annual General Meeting took place in May 2018. The venue and catering by the Northern Clivia Club was greatly appreciated by all. The Society executive remained the same, except for Joubert, who no longer fills the role of permanent editor of the Clivia News and Yearbook. This edition still has Joubert as the editor and we hope that there will soon be someone who is prepared to fill this role.

The activity of all clubs in general has shown a decrease in membership. This is not unique to the Clivia Society. There is an apathy amongst members to fill the various positions on the committees. The manual task of addressing the envelopes for the Yearbook, the placing of these in boxes and posting them, is a task that Sakkie and Esme Nel perform. This activity is thankless and unappreciated by most members. Perhaps the time has arrived to start with the digital distribution of the publications. We could start with the Clivia News in a digital format. The advantage is an immediate distribution of the publication once it has been completed. There will be a reduction of the price of postage by the Society and the clubs, and this will be less labour intensive. Hard copies may be printed by the clubs for members who will be responsible for these costs. There will be a resistance to the digital format, but unless we have volunteers to perform the work and the members are

prepared to accept increased affiliation fees, the present arrangement will have to change.

We welcome the application of the Toowoomba Society to become a fully affiliated club of the Society. We look forward to working with them in the future.

The 2018 Clivia Society Conference takes place on 5 and 6 September at Glenburn Lodge, Northwest of Johannesburg. Registration is slow and if you would like to attend, please register earlier rather than later. A cut-off, prior to the conference will be necessary to decide on the venue size and we will thus not be able to accept more registrations once this decision is made. The easiest way to register is on the Clivia Society website: www.cliviasociety.org – the registration form is under the Clivia Conference 2018 tab. You may also contact me at 082 650 1463. The list of speakers is impressive and everyone will gain from attending the conference. Should anyone be interested in entering a plant on the auction at the end of the conference, please let Joubert van Wyk know.

The various shows with dates, venues and contacts are included in this publication. Please make the time and effort to support these events.

Regards,

Glynn Middlewick

Show calendar in South Africa

FREE STATE CLIVIA CLUB INTERSPECIFIC SHOW AND SALES

21 July 2018

Venue: Fleurdal Mall, Vereeniging Road,
Southern Suburbs, Bloemfontein

No entry fee

Contact: David Fourie on 072 614 3091

NORTHERN CLIVIA CLUB INTERSPECIFIC SHOW

28 July 2018

Venue: Laërskool Anton van Wouw, Dey Street,
Nieuw Muckleneuck

Contact: Marlene Topham 082 799 4746

GARDEN ROUTE CLIVIA CLUB INTERSPECIFIC SHOW

11 August 2018

Venue: George Kwekery, Airport Road, George
Time: 10h00 until 14h00

No Entry Fee

Details: Contact Rocco Kriel 044 879 0040

NEWCASTLE INTEREST GROUP MINIATA SHOW

1 September 2018

Venue: Drakensberg Primary School

Time: 09h00 until 16h00

Contact: Alfred Everon 083 304 0826

NORTHERN CLIVIA CLUB SHOW AND SALES

1 and 2 September 2018

Venue: Laërskool Anton van Wouw, Dey Street,
Nieuw Muckleneuck

Entry R20.00 per adult

Contact: Marlene 082 799 4746

e-mail: marleneto@telkomsa.net

KZN CLIVIA CLUB DISPLAY AND SALES: PIETERMARITZBURG GARDEN SHOW

7, 8 and 9 September 2018

Venue: Royal Show Grounds, Pietermaritzburg
(Cost included in show admission)

Contact: Randal Payne 083 776 2864

VRYHEID INTEREST GROUP

8 September 2018

Contact: Nico Grobbelaar 084 273 1632

JOBURG CLIVIA CLUB SHOW AND SALES

8 and 9 September 2018

Saturday: 08h00 until 16h30

Sunday: 08h00 until 14h30

Venue: Garden World Nursery, Beyers Naude
Road, Muldersdrift (M5)

Entry Fee R20.00 per person over 12 years
of age.

Contact: Glynn 082 650 1463

Lynn 083 413 4633

NORTHERN FREE STATE CLIVIA GROUP SHOW AND SALES

8 and 9 September 2018

Venue: Toronto Hall, Jan Cilliers Park, Welkom

Saturday 8th – 08h00 – 16h00

Sunday 9th – 09h00 – 13h00

Entry fee R10.00 for adults

Contact: Jan Schmidt 083 407 5563

FREE STATE CLIVIA CLUB MINIATA SHOW AND SALES

14 to 16 September 2018

Venue: Fleurdal Mall, Vereeniging Road,
Southern Suburbs, Bloemfontein

Daily 08h00 until 17h00

No Entrance Fee

Contact: David Fourie at 072 614 3091

CAPE CLIVIA CLUB DISPLAY AND SALES

15 and 16 September 2018

Saturday: 09h00 – 17h00

Sunday: 09h00 – 16h00

Venue: Richard Crowie Hall,

Kirstenbosch Gardens, Cape Town

Entry: Entry fee into Kirstenbosch Gardens

Contact: Clayton Jonkers at 083 267 7206

KZN CLIVIA CLUB MINIATA SHOW

15 September 2018

Venue: Kloof Town Hall, Kloof
09h30 – 03h30

Contact: Randal Payne 083 776 2864

LOWVELD CLIVIA CLUB

16 and 17 September 2018

Venue: Nelspruit Botanical Gardens

Saturday: 08h00 – 16h00

Sunday: 09h00 – 14h00

Entry: R20.00 per person

Contact: Henriëtte Korf 079 492 4317

**CAPE CLIVIA CLUB CLIVIA SHOW
AND SALES**

22 and 23 September 2018

Saturday 09h00 – 17h00

Sunday 09h00 – 16h00

Venue: Tygervalley Shopping Mall, Durbanville

Entry: R20.00 per adult

Contact: Joy 072 487 7933

**EASTERN PROVINCE CLIVIA CLUB
CLIVIA SHOW**

22 to 24 September 2018

Venue: Baywest Mall

Saturday: 09h00 – 17h00

Sunday: 09h00 – 17h00

Monday: 09h00 – 17h00

Entry: R10.00 per person over 12 years old

Contact: Dawid Botha 082 497 8304

**GARDEN ROUTE CLIVIA CLUB –
CLIVIA MINIATA SHOW**

22 and 23 September 2018

Venue: Outeniqua Primary School,
Cathedral Street, George

Entry: R20.00 per adult. Children free entry

Details: Contact Rocco Kriel at 044 879 0040
or 083 653 9644**OVERBERG INTEREST GROUP CLIVIA
SHOW AND SALES**

28 and 29 September 2018

Venue: NG Kerk – Hermanus Central –

Opposite the Absa Bank

Friday 28th 09h00 – 17h00

Saturday 29th 09h00 – 16h00

Entry R15.00 per adult

Enquiries: Felicity 078 710 9485 or

Miriam 072 904 0415

**GARDEN ROUTE CLIVIA CLUB
DISPLAY – MOSSEL BAY**

29 September 2018

Venue: Mossel Bay Agri

Details: Contact Rocco Kriel

at 044 879 0040

***Clivia* Photographic Competition for Yearbook 20**

The Clivia Society announced the 2019 Clivia Society Photographic Competition. It is open to members of Society, affiliated clubs and interest groups. The object is to encourage *Clivia* enthusiasts to submit photographs from around the world. Please submit entries of photographs of attractive as well as some unusual *Clivia* flowers and plants.

Prominent space will be allocated in the Yearbook to winners in all categories as well as other entries of merit. The name of the photographer will be published with each relevant photograph. The best photograph in each category will be selected from all entries in such category. The Habitat section, by definition, is only open to photographs taken in the *Clivia* endemic areas of Southern Africa.

Categories are as follows:

1. Miniata
2. Pendulous species
3. Interspecifics
4. Habitat (Photographs of habitat plants can only be photographs of plants taken in Southern Africa in their natural surroundings.)
5. Single flower – any species
6. Other *Clivia* photos e.g. buds, berries, foliage, floral art

The conditions and rules of entry are:

1. A completed entry form (such will be provided on the Clivia Society website: www.cliviasociety.org) must accompany submissions.
2. Entries must be submitted by Sunday, 15 February 2017 to participate in the competition. No extension of the deadline will be possible, as this deadline is based on the publishing deadlines for the Yearbook.
3. Entries are limited to three per category per person.
4. Photographs may be mailed to Clivia Photographic Competition (details will be provided Clivia Society website: www.cliviasociety.org)
5. Photos must be submitted in one of the following formats:
 - a. All photographs must be recorded in jpeg format, no larger than 2 MB per photo. No scanned or printed photos are to be submitted.
 - b. The resolution of the image must be saved on at least 300 dpi.
 - c. The pixel size should be a minimum of 1024 x 768 pixels.
 - d. Photographs must be on their own and not embedded in another program e.g. MS Word.
 - e. Names, dates or watermarks are not permitted to be included on an image. If any photographs are submitted with such annotations they will be disqualified.
6. Neither CD-Rs nor flash drives will be returned after the competition.

The decisions of the Panel of Judges on the winners of the competition within the respective categories are final and no correspondence will be entered into in relation to the competition or any aspect relating to such.

Remember to take the following aspects into account when capturing, editing and selecting your competition entries: Beauty of the flower, uniqueness of the flower, sharpness of the image, colour trueness, absence of distractions, good or unique composition, unique angles, framing and cropping, lighting (backlit, side lit, diffused, hard, flash, natural), background (contrast, tidiness and complementing colour), correct white balance etc.

The Clivia Society and its affiliates reserve the right to free reproduction and use of any of the images entered in this photographic competition to promote or advertise *Clivia* through whatever medium they may deem fit. In other respects copyright will remain with the photographer. With any publication of a photograph, credit will be given to the photographer. The receipt of an entry form (either by email by way of scanned copy or by post) will constitute the granting of such aforementioned permission by the photographer, and that the entrant agrees to abide by the rules of the competition.

CLIVIA BREEDING

KZN Clivia Club – Outing to Oribi Gorge: June 2018*By Felix Middleton***Background**

The first true *Clivia robusta* that I ever encountered was in 2009 in a garden at the hotel at that time gave me several seeds. Unfortunately none of the progeny grew to the same robust form as the parents. Apparently the wife of the original owner had planted a few *Clivia* in front of the entrance to the hotel. Offsets of these plants were in later years relocated throughout the gardens. The former owners have since passed away and the origin of those original plants is therefore unknown. This is disappointing as they are clearly of the swamp *C. robusta* form and I have not yet found colonies of these in the area.

The KZN Clivia Club elected to visit Oribi Gorge to observe *C. robusta* in habitat as part of a strategy to educate members about *Clivia* in habitat. Eland Lake Reserve is known as one of the few places where *Clivia* can be appreciated without much difficulty. As it is a private reserve and the owners of the property are conservation minded, the *Clivia* are jealously preserved. We hope that these plants will be left undisturbed for future enthusiasts to enjoy.

The tour

The outing was treated as an informal tour where everyone organised their own travel and accommodation. Some visited for the day, while others stayed over in lodges close to the coast. My family and I opted to stay at the hotel for the weekend. Although affordable and highly recommended, the accommodation at Eland Lake was not available on the weekend of the outing owing to a wedding function.

After an early morning meeting and discussion on the Saturday at the suspension bridge in Eland Lake Reserve, we explored the plants that were growing and flowering all along the walkway. We then proceeded to a less known site on the western side of the reserve to explore the plants growing in the thicket

and among rocks. The day was ended off with a lunch at Leopard Rock restaurant, which is owned by Andries Bruwer, a devoted *Clivia* enthusiast. Andries has been instrumental in the conservation and preservation of *Clivia* that have been displaced by mining. He is also involved in business and agricultural development in the Gorge. We visited his *Clivia* collection, where a few very special *Clivia* were in bloom. He also showed us the very functional hydroponics system where he grows all the vegetables for his restaurant. From here some visitors returned home while others stayed for another evening in the Gorge. Those who stayed decided to meet at the Oribi Hotel for coffee early on Sunday to plan another day of hiking. As the group was small and we were not comfortable to leave our vehicles unattended within the Oribi Gorge Nature reserve, we decided to walk down into the Gorge from the hotel.

The walk down to the bottom of the gorge from the hotel is not easy. The hiker needs to transverse a minefield of loose boulders, holding onto thorny trees to maintain balance, and at the bottom scamper down over several huge boulders. Even with all these obstacles, the way down was spectacular. We encountered a large variety of tree species, ferns, Gasterias and even a few cycads, including the large leafed *Stangerias* typical of this area. The walk along the river at the bottom was also not easy, but worth the effort. We found quite a few *C. miniata* along the way downstream. At the end, when we could go no further, we were surprised by a *C. miniata* flowering out of season. At least the way up was not as strenuous as the way down.

The *Clivia* from Oribi Gorge

Strictly speaking, the pendulous *Clivia* from the area are *C. robusta*. Many in the *Clivia* community believe that the autumn flowering species should all be regarded as one group. However, within this group there is sub-grouping which is due to differential development between specific



Clivia robusta at the main entrance of the Oribi Hotel

locations. At the one extreme we find small, thin-leaved plants with a low flower count typical of the midlands *C. gardenii* plants. At the other end we find the broad leafed swamp *C. robusta* types with huge umbels containing many large flowers. The latter are found more towards the south-eastern end of the autumn flowering *Clivia*'s growing range. The plants

found in Eland Lake fall between these two extremes. Although there is a huge amount of variation with regards to plant type, the typical Eland Lake pendulous plant is of intermediate height, has long, soft leaves but also has an above average flower count.

Not all pendulous plants flowered in 2018. Those with heads of seed from the 2017 season



Clivia robusta growing in the thicket at Lake Eland Reserve



Bronze form of *Clivia robusta*

generally did not flower the current season. Seedset was very high and most umbels from the 2017 season showed full heads of ripening pods. It is unusual to see such a large amount of ripening seed, as the seed from pendulous *Clivia* species are removed by birds or rodents, often even before they show signs of ripening. Although the typical color is dark orange, some plants have dark red, almost bronze, flower

colour. We also observed plants with a pink flower colour. It was also interesting to note that the variation is grouped in clusters of plants. A cluster has in all likelihood originated from a single seedling and is therefore a collection of clones. For instance, we observed clusters of pink flowering plants, clusters of plants with a median stripe on the leaf and clusters having flowers with short pedicels. The clusters were comprised of 5



Crossing the suspension bridge to view the *Clivia* on the other side

to 10 plants each.

The *C. miniata* growing in the Oribi Gorge are not abundant and are localised in small groups. They have thick leathery leaves and a low flower count. We observed one with an out-of-season flower and going by this one example, one can conclude that the plants below the Oribi

Hotel are orange in colour and have huge flowers. Past excursions to the area during the *C. miniata* flowering season have shown that this is the norm for the area. The leathery blue leaf characteristic of these plants demonstrates a relationship with the Pondoland blue-leaved *C. miniata* types from Northern Transkei.



Lookout point at the Leopard Rock Restaurant

Future visits

The outing, was a huge success and we have decided to make this trip an annual event. Hopefully, in future we will be able to structure it as a formal tour where we all stay at one venue and maybe even throw in a presentation or two. We intend to explore the hiking trials within the Oribi Gorge Reserve on our next visit. There are

two hiking trials leading from the parking area in the reserve. One is a short, easy hike to a man-made dam on the river. The other, although also not too strenuous, takes a much longer route upstream and ends at a spectacular waterfall. Unfortunately many of the *Clivia* that were growing along the river banks have, in recent years, disappeared. ▼



'Red Robusta Green Tips'

PICTURE BY HENRY HOWARD



'Red Ghost'

PICTURE BY HENRY HOWARD

Cryptostephanus – Know Your Relative

By Connie & James Abel

With six species, *Clivia* is a relatively small genus in the family Amaryllidaceae which has about 75 genera and around 1600 species. *Clivia*'s closest cousin, *Cryptostephanus* is even smaller, with three species from African countries north of South Africa.

Cryptostephanus featured in the first volume of *Clivia News* in 1992, when Dennis Tsang from Hong Kong proposed interbreeding *Cryptostephanus densiflorus* with *Clivia*, the attraction of such a cross being that the latter species has a purplish coloration. In a follow up in CN 2.1 Les Larson from Australia summarised several articles on *Cryptostephanus* and Nick Primich, founder of the *Clivia Society* and editor, discussed attempts at intergeneric crossing. [All CS publications from 1992 to 2016 are available on <http://www.clivasociety.org/newsletters-clivia-society/clivia-news/>.]

In 2002 Harold Koopowitz published the first substantive book on *Clivia* ("*Clivias*", Timber Press). He included a detailed section on *Cryptostephanus* (pp 56 – 65) which is recommended reading for those who are interested. The South African National Biodiversity Institute at <http://pza.sanbi.org/cryptostephanus> and Wikipedia <https://en.wikipedia.org/wiki/Amaryllidaceae> are also good sources of information.

The genus is named from the Greek words *kryptós* (hidden), and *stephanus* (a crown), the latter because the flowers are characterized by having a partially hidden crown-like structure (a corona) consisting of 6 or 12 narrow appendages attached to the inner tip of the perianth tube (SANBI).

Both *Clivia* and *Cryptostephanus* are atypical amaryllids, in not having true bulbs. Similarities between the two genera, include having berries that take close to a year to mature, changing colour from green to a bright red. The seeds of the *Cryptostephanus* are in contrast brown, intermediate between the black of some amaryllids and the pigment-free seed of *Clivia*.

In habitat, they will also be dispersed by birds, monkeys and rodents. As with *Clivia*, they are sensitive to frost and direct sunshine.

The three species are:

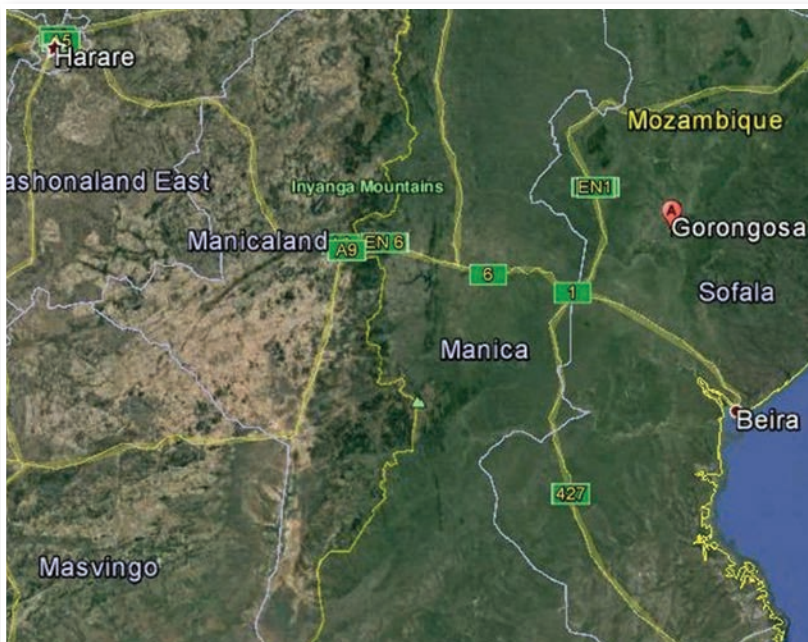
C. densiflorus, native to the border between Namibia and Angola, growing as a single plant or in small clumps, with high rainfall summers and dry winters. The habitat photo is from Swanevelder & Fisher ('*Clivia Nature & Nurture*', 2009) and the flower from SANBI. It is the smallest of the three species and is seldom seen in collections.

C. haemanthoides is widespread in southern Kenya and north-eastern Tanzania. It is deciduous and is also very rare in collections. It is the largest of the three species, and Koopowitz states that the umbel can carry over 150 flowers. The photos are from Koopowitz and SANBI respectively.

C. vansonii is found in the cool, moist forests of the mountainous border between Zimbabwe and Mozambique (map from Google Earth), ranging from Inyanga in the north (shown upper centre) through the Bvumba to Chimanimani in the south.

C. vansonii is evergreen, in contrast to the







Periodically there have been claims of successful hybridizing between *C. vansonii* and *C. miniata*. "Seedlings" have been shown at meetings, but when flowered these have proved to be *C. miniata* flowers – errant draughts or insects? The corona impedes access to the anthers for attempts to collect pollen or emasculate. No crosses have been demonstrated. It is unlikely to happen, since *Cryptostephanus* has 24 chromosomes and *Clivia* has 22 (perhaps a sterile 'mule' some day?). Had they been compatible, there would be interesting colour and form options, particularly from



C. haemanthoides.

The forest environment of *C. vansonii* is closest to that of *Clivia*. Koopowitz mentions having seen *C. vansonii* in the Bumba mountains in Zimbabwe, with specimens growing lithophytically in leaf litter on large rocks. This is similar to the numerous caulescens plants that can be seen growing on top of boulders in the rain forest at Gods Window and elsewhere. There may be epiphytic *C. vansonii* as well, although we not aware of any reference to this.

Besides Koopowitz's observations on the Bumba, the only other enthusiast to visit a *C. vansonii* habitat of whom we are aware, is John Turner from Johannesburg. The two photos were taken by him on Gorongosa mountain in Mocambique, 200 km east of the escarpment border with Zimbabwe (see map). His two photographs show the similarities of their habitats to those of *Clivia*.

Among the enthusiasts who have experience growing *C. vansonii* is Alick McLeman, previously from Durban and now living in New Zealand. He has told us "In our previous home I had them growing in the garden, relatively open but with some shade, but without any special attention. Just our ordinary garden soil. Like *Clivia*, they seem to thrive on neglect, but do appear to tolerate more sun than *Clivia* do. It so happens that I have a plant in bloom



other two species which are deciduous. Flower forms range from pink to white as shown in the photos (A McLeman & J Abel). In our collection we have enjoyed the protracted overlapping in the umbels of buds, open flowers and developing berries, all present at the same time.



as I write, with two umbels which in the first photo appear to be white flowers, but in fact are a very pale pink. This can be seen in the

second photo.”

In summary, this plant is a nice relative to round off all *Clivia* collections. ▼



Plant Breeders Rights and the mandate of the International Union for the Protection of New Varieties of Plants (UPOV)

KZN Club contribution, prepared by Felix Middleton

Plant breeding is a time consuming and expensive undertaking. The process of breeding an exceptional plant takes many years. For instance, it may take as long as 12 years for a maize variety to reach the commercialisation phase. The average profitable life of a maize variety is less than 5 years. It is only fair that the new variety be protected for at least its commercial lifetime in order to compensate the breeder for the effort, financial input, skill and economic risk that goes into variety development.

Laws and regulations are most often restrictive and lead to paperwork and needless bureaucracy. However, the concept of Plant Breeders Rights (PBR) leads to a win-win situation if managed correctly. The idea was developed not by lawyers that were trying to cash in on a loophole or deficiency in legislation or by government bureaucrats who were trying to regulate an industry. The idea was formulated and is still being fine-tuned by the plant breeding community itself.

Many *Clivia* breeders and enthusiasts have recently expressed an interest in this subject. The aim of this newsletter contribution is to present the reader with a short introduction to PBR and especially the part that UPOV plays in the process. At first it seemed to be an easy and straightforward subject to address, however, I now realise that it is quite a complicated issue to summarise in just a few paragraphs. Please regard the following as an incomplete review of the subject only. For additional information, refer to the official website at www.upov.int. I have summarised the main points in the last paragraph for those that may not want to read through the whole document. However, make sure you gain more information before you test the legal system on this subject.

Plant Breeder's Rights – How it works

PBR are similar to patent rights. The breeder

will for instance develop an innovative variety, apply for PBR protection, wait for proof that it is a new variety and then sit back and reap the benefits of his/her hard labour for a period until he/she or another breeder comes up with something better. The system seems simple, as the idea is that a breeder may be rewarded for his/her activities in order to fund further breeding efforts. A downside is that the system may be abused in order to create a monopoly on breeding in a given sector. As with many patents, it can also result in delaying future innovation. Fortunately the plant breeding community had the foresight to address these issues and established a platform where the rights of both sides, breeder and future breeder, can be addressed.

Biotechnology traits (GMO's) are not covered by plant breeder rights. They are regulated by other legislation similar to true patent rights and stewardship agreements.

UPOV

The International Union for the Protection of New Varieties of Plants was established to promote plant variety protection. The aim of UPOV is to provide guidelines to protect a plant breeder's rights without inhibiting the rate of future improvements. It is important to note that UPOV have no legal power to enforce the rights, but provide assistance when arbitration or litigation is imminent. Most breeding institutions follow the guidelines set out by UPOV and even have more stringent in-house procedures. Infringements are taken seriously as just the rumour of possible transgressions affects the ethical and moral trustworthiness of breeding establishments. The headquarters of UPOV is in Geneva, Switzerland.

The first guidelines were documented in the form of a convention or agreement and adopted in Paris in 1961 by several countries. Plant breeding is changing and evolving as a result of

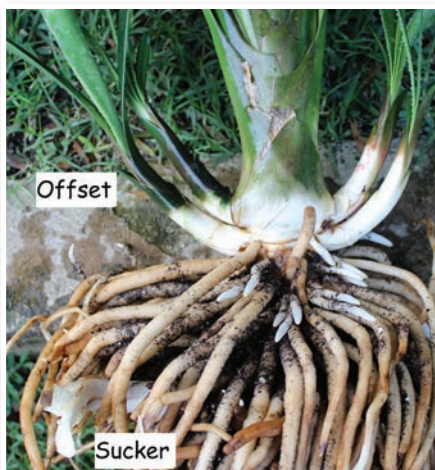
advances in biotechnology. Deficiencies in the system are continuously being created by these innovations. As a result amendments to this UPOV agreement were made in 1972, 1978 and 1991. South Africa is part of this collaboration and has undersigned the 1978 agreement but is yet to sign the 1991 agreement. This is interesting as the amendments in the 1991 agreement were drafted especially to accommodate the rights of the small scale farming community.

UPOV keeps a register of all protected varieties. The aim is that a variety on the list has the protection of PBR. The breeder of the variety can multiply and sell said variety but others need permission to multiply and sell the variety. The original breeder may refuse permission to sell in order to keep sole rights on multiplication and sale, but if permission is granted a binding agreement is signed which usually includes payment of royalties. The protection of the rights are not indefinite. Depending on the crop, the rights do expire after a few years.

PBR are only applicable to the sale of the protected variety. Breeding with the variety is permitted and a new variety may be produced by using the original as parent. It is important to note that the parental plant needs to have been acquired by legal processes before it is utilised in future breeding. For example, breeding institutions produce hybrids by intercrossing inbreds. The hybrid, which is subject to PBR, is sold to the farmer but the inbreds are kept under lock and key at breeding stations. It is illegal to climb a fence and collect the inbred plant without permission of the owner of the property. So even though the inbred may be used in further breeding programs by another breeder, there is no way of obtaining the inbred legally. Furthermore there are some conditions relating to genetic dissimilarity that may result in liability to the prospective breeder. Some of these will be discussed under the heading of EDV.

Advantages of signing the UPOV agreement

Countries that are not part of this collaboration are regarded as high risk zones for germplasm exchange. Economically important varieties are exploited in these countries without the original breeder being compensated for his/her efforts.



Adventitious shoots developing on a *Clivia* plant.

International plant breeding organisations often only sell hybrid seed in these countries but will not invest in breeding activities within these countries. Institutions such as the USDA and CIMMYT have programs where germplasm is developed or collected for the “greater good”. Material is requested from and presented to plant breeding programs all around the world. Universities, commercial plant breeding programs and even small scale backyard gardeners have in the past gained from this interaction. However, these germplasm banks do screen the requester and only a small selection of what is on offer is supplied to individuals from countries where PBR are not enforced.

What is regarded as a variety?

The protection of PBR is bestowed on a specific genetic type exhibiting defined characteristics. This type may either be a variety which originated from nature or a cultivar or cultivated variety which was developed in a breeding program or selected during cultivation. The protection is only granted if the type is stable or reproducible and has a set of characteristics that distinguish it from other types. Under the UPOV guidelines a new variety can only be registered if it adheres to the DUS standards. It needs to be DISTINCT from any other variety registered and not been commercially available for more

than a year. The traits used for determining distinctness should be UNIFORM for the type and not a mixture of variations. It then needs to be STABLE by always exhibiting the same

characteristics for each plant and each time it is sold. Some examples of types that may be protected by plant breeder's rights are noted in the table below.

Class	Example	Description of the type that is protected
Inbred cultivar	Wheat variety (a natural self-pollinating species)	The type can be reproduced by replanting seed that was harvested from the parental cultivar as the type reproduces true through self-pollination. Progeny are identical copies of the parent.
Single cross hybrid between inbreds	Maize variety (a natural cross-pollinating species)	When two inbreds are crossed, the progeny, even though heterozygous (consisting of parts from both parents), are all identical. Each time the cross is made, the outcome is the same. Only the first generation is stable, further selfings or crosses from the hybrid will look different (show segregation).
Clone	<i>Agapanthus</i> / <i>Clivia</i>	Offsets, suckers* and pups are all terms that describe the shoots that develop on a plant. Bulbs, bulbils and tubers can also be used to propagate plants. This process of vegetative propagation results in exact copies of the type.
Open pollinated variety (OPV)	Old maize varieties	Some of the original varieties were not maintained as inbred lines but as impure populations. The whole population is regarded as a variety as it has a distinct type that distinguishes it from others. An OPV is maintained by allowing the population to intercross and then using the progeny as the next generation. The difficulty is to keep all the characteristics of the variety over generations as processes like inbreeding and genetic drift causes overall genetic changes over time.
Synthetic variety	Forage grasses	Some breeders mix different inbreds to produce a population that has a specific quality and appearance. Adaptation in these populations is generally good as mixtures of different types are better buffered against environmental stresses than in a system of monoculture. The breeder needs to maintain the individual components of the synthetic variety to reconstitute the type each generation.
Line / strain	Daruma <i>Clivia</i>	A breeder may develop a variety by inbreeding (successive selfing or sib-crossing) while selecting for defining traits. The end product is a strain that can be maintained with seed. Progeny are almost identical to the parent and easily discernable from other strains depending on the level of inbreeding. A breeder may develop a variety by inbreeding (successive selfing or sib-crossing) while selecting for defining traits. The end product is a strain that can be maintained with seed. Progeny are almost identical to the parent and easily discernable from other strains depending on the level of inbreeding.
Hybrid from strains	Future of <i>Clivia</i> breeding?	It may be possible to create strains that are so inbred that a cross between them will result in progeny that are nearly identical. Although the type can be propagated by seed, it can only be done if the breeder has the original strains.

Essentially derived varieties (EDV)

As noted before you may utilise a variety or cultivar that is protected by PBR in order to create a new cultivar. However, in recent years biotechnology has progressed to a stage where it is easy to recreate a very similar type to the parental type. I will not elaborate on these tricks of the trade but rather describe the dilemma by way of a hypothetical example. A breeder may take up to 12 years of selection, crossing and evaluation to develop a new variety. Yet it is possible for a second breeder to improve on this variety by adding only a single trait with the use of biotechnology. I am not referring to GMOs, these are covered by different legislation (patent rights) as stated before. Strictly speaking breeder 2 may apply and obtain breeders rights on the improved variety even though the breeder has put less effort into the venture than breeder 1. Similar to using the formula for Coca-Cola but selling the beverage as a more appealing colourless liquid. UPOV has covered this loophole by introducing the term Essentially Derived Variety or EDV. An EDV is defined as a secondary variety that was derived from the initial variety but has a very similar genetic makeup to the first variety. The usual process of determining an EDV is for breeder 1 to compile data that shows that the new variety is at least 80% similar to his original variety. If this is proven, the case may be taken to court if no out-of-court settlement can be reached. If taken to court there is now a shift in the burden of proof. Breeder number 2 now needs to prove through accurate breeding records, agronomic data and even molecular data that the parentage of the new variety does not



When applying for PBR, the whole type is evaluated. Application for PBR on a single trait is not permitted.

contain the first variety or that the second variety is genetically dissimilar to the original. The perception of dissimilarity varies between crops but the rule of thumb is that if there is a 95% and higher level of similarity, breeder 2 has transgressed. If breeder two is at fault, he may be liable for all legal costs as well as the possible loss of income incurred by breeder 1 during the commercial life of the EDV.

PBR and *Clivia*

Refer to the table below for a summary of *Clivia* varieties currently under review for, or enjoying PBR.

Clivia varieties currently under protection of UPOV

UPOV Code	Country	Botanical Name	App. No	App. Date	Grant Date	Denomination
CLIVI MIN	US	<i>Clivia Miniata</i>	6621799	1984-06-18	1988-06-21	Monya
CLIVI	JP	<i>Clivia</i> Lindl.	2714	1988-03-30	1992-12-07	UYONOHANA
CLIVI	JP	<i>Clivia</i> Lindl.	3735	1990-03-07	1993-01-18	PURE FIRST
CLIVI	JP	<i>Clivia</i> Lindl.	7095	1994-08-18	1998-10-06	SANBIKO
CLIVI	JP	<i>Clivia</i> Lindl.	11315	1998-10-21	2002-03-25	HITACHINO
CLIVI	QZ	<i>Clivia</i> Lindl.	19990369	1999-03-15		
CLIVI	ZA	<i>CLIVIA</i>	PT 2929	2000-02-04		PRINS
CLIVI	JP	<i>Clivia</i> Lindl.	12434	2000-03-16		KIYOHIME
CLIVI	ZA	<i>CLIVIA</i>	PT 3807	2003-04-01		AFRIKA'S MIRACLE
CLIVI	JP	<i>Clivia</i> Lindl.	20446	2006-12-13	2008-06-03	YUKYU



Components for a candidate *Clivia* strain that may gain from PBR

Why have so few *Clivia* been submitted for PBR while more than 200 cultivars (most likely varieties) of *Agapanthus*, enjoy the protection of PBR? The answer is in the difference in rate of propagation between the two species.

An *Agapanthus* variety is easy to propagate on a large scale and thus exploitable. On the other hand, propagation of a *Clivia* cultivar takes time. There is very little chance that a nurseryman will be able to exploit a *Clivia* cultivar before a better one has been bred. The cost, time and effort of applying and

obtaining PBR for a *Clivia* cultivar precludes the advantages of the protection.

The only way a *Clivia* breeder can profit from PBR is to create a strain stacked with as many as possible recessive, rare, polygenic or just challenging to breed with traits. For example a strain with ultra-broad, compact leaves showing tiger variation and sporting a huge umbel of yellow multitepal flowers with re-curved tepals and an intense versicolor could be a candidate type as:

1) The variety has a high economic value



Pink *Agapanthus* – It is easy to identify an *Agapanthus* variety in habitat, register it for PBR, propagate the clones on a large scale and then profit by having exclusive rights to sell them.

- 2) It possibly has a long commercial life
- 3) It is easy to multiply
- 4) The self-pollinated progeny of the strain will also be protected by PBR
- 5) It will take more than a single generation to recreate a similar cultivar

However, breeders embarking on such a project should make sure that they do not sell substandard progeny as spin-offs before the final product has been submitted for protection. These seemingly inferior progeny contain at least part of the genes that may be used by another breeder to recreate a similar strain. Also, one of the prerequisites before applying for PBR is that the type may not have been sold before.

Other legislation

Although UPOV has provided these guidelines for Plant Breeders Rights, other legislation may also be applicable for a specific variety

or cultivar. Any cultivar which is classed as a genetically modified organism and therefore containing a GMO trait, may be registered for protection by PBR but may not be used in breeding programs without the consent of the original breeder or GMO developer. Consent will include a formal contract and a comprehensive stewardship agreement to manage and contain the GMO trait. Furthermore, some breeding institutions enter into a contract with producers and retailers that prohibit breeding and or multiplication of the cultivar. For instance, each bag of maize seed that is sold to a farmer or retailer contains a note indicating that the seed is sold under contract and with restrictions. Even if you obtain seed without this contract, a large multinational company could drag you to court, which will result in years of paperwork, costs and penalties. You may be able to win a case but your reputation will be ruined. You may even be bankrupt before you see the end



Pink *Clivia* in habitat – the slow rate of propagating a *Clivia* variety seemingly precludes the usefulness of PBR for this Genus

of the process. My suggestion; don't even try it.

I have recently encountered germplasm exchange contracts which are surprisingly inflexible. Universities and government institution will for instance provide you with a plant, seed or pollen but indicate in the contract that you may not breed with, sell the product or even sell the progeny created from the product. Be aware that when you buy such a plant you are bound by the added restrictions specified by the contract and cannot use the UPOV guidelines to your defence.

For those who got bored and only want the summary on PBR:

- Plant Breeders Rights (PBR) allow the breeder to cash in on his breeding efforts
- A cultivar is a variety that was developed or selected in cultivation
- You may not multiply and sell a variety which is under the protection of PBR
- You may breed with a variety that is protected by PBR
- PBR is granted on the whole type, not just a single trait
- A new cultivar needs to be more than 5% genetically different from another
- When creating a strain, do not sell sub-standard progeny before completion
- Do not mess with large multinational breeding institutions! ▼

RELATED

Clivia, good, odd and ugly #10: Freakish #2By *Connie & James Abel*

Nick Primich founded the Clivia Society in 1992 with a widely distributed international membership. The first conference and show was held at the Pretoria Botanic Gardens in September 1994. With many members from overseas, a photographic exhibition was included to enable everyone to participate and it was well supported, from Australia in particular. We entered a photo of Frats Fine Petal ('Freakish #1'), and overheard Mirriam Meltzer from west of Pretoria saying that she had a similar specimen in her collection which was headed for the compost heap. Happily for us and for many other enthusiasts around the world, Mirriam kindly gave it to us when we offered to 'save' it.

The first photo (Kerneels Breytenbach) with the colourful bracts shows it well, the second (Koos Geldenhuys) gives a great mass display and the third (Jim Comstock) is even better at explaining why we called it 'Frats No Petal'. Love it or hate it – we have had untold pleasure seeing the disbelieving reactions of the public at *Clivia* shows, ranging from shudders to fascination – "Is it a flower if it has no tepals?"

'Frats No Petal' is a robust plant. It frequently has disfunctional anthers and stigmas, but it does set viable seed. Seedlings may develop fragmentary tepals as shown in the next photo (J Abel).



A single umbel (K Breytenbach)

A naked flower
(J Comstock)

Fragmentary tepals (J Abel)



Four umbels together (K Geldenhuys)

Even more happily, it is a good at making offsets. It now has international distribution and is shown in the three photos from the collection of Mr Cui, well known enthusiast and breeder in China.

It has been a "fun" *Clivia* to have, but prospective owners of a specimen should be aware that friends are likely to say that new owners must be as odd as their new 'Frats No Petals'!

Contributions in this series will be gratefully received at jcabel@absamail.co.za. ▼



Frats No Petals in China (Mr Cui)

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 <p>Red Fury Cosmic Clivia</p>	 <p>Yellow Fury Cosmic Clivia</p>	 <p>Red Fury Cosmic Clivia</p>	 <p>Red Fury Cosmic Clivia</p>

LETTERS TO THE EDITOR

Caring for the roots of the *Clivia* plant

The article in *Clivia News* Vol.26.2 of 2017 by Dr. Lena van der Merwe about “Take good care of the roots of the *Clivia* plant” is to my mind the most valuable contribution to all *Clivia* lovers during the past 20 years made by any person. With this huge wake-up call we all know now why the Chinese growers are decades ahead of us, and we might never be able to bridge the gap?

So far I am amazed that the *Clivia News* letter box is not flooded with contributions of members sharing their experiences about this important matter?

Harold Koopowitz wrote in his book “*Clivias*” on page 101+: “The most important needs are the correct amount of sunlight, soil aeration and adequate drainage. The latter two parameters are interconnected. If a deep container is needed for land- or hardscape purposes, then part of the depth of the pot can be filled with broken crocks, Styrofoam chunks, or gravel (first make sure that there is sufficient drainage at the bottom of the pot). The so-called Styrofoam peanuts are excellent for drainage and plant roots seem to like them, but one should avoid concave Styrofoam chips or other shapes with indentations where water can accumulate.”

On page 102 he wrote÷: “*Clivia* will succeed in a variety of soil types provided they are well drained and have sufficient organic matter. Many of the currently available soil mixes used in pots have little sand or inorganic matter incorporated into them, and after a year or two, the soil level in the container will start to drop and the plants will sink down in the pot, spoiling the effect. To maintain the soil level, at least half of the volume of potting soil should



Lovely mix after 15 years



Mix close up

be gravel, pumice, coarse sand or small chunks of lava rock about 3/8 inch (1 cm) in diameter.”

Take note that he does not mention any bark chips. I will never use bark chips in my growing mix, because you never know whether they are well composted.

In our house we have an inner court with eight large cement pots containing 55 mature *Clivia* plants.

This area has an open roof and it normally gets quite hot and wet (from rain) and is therefore very prone to mealie bug, because of the lack of air flow.

Lena told me that I need to check the roots of all the plants in these pots, after taking care of the mealie bug, “because they show signs on the leaves of root-stress”.



Not any healthy roots



Out of the cement pot



Plants before re-potting

To me, apart from the occasional dry leaf tips the other leaves did not look too bad. Please see photo when they flowered in September, 2017. Before I started to replant them, I knew that they had been in the same growing mix for longer than ten years. When uprooting them, on January 18, 2018, I found that they were all planted on March 15, 2003 in my home made mix. (Info I got from the plastic markers that I submerged inside the mix).

So to the day the 55 plants were in the same mix for 14 years 10 months and 3 days!!!

The growing mix was a bigger shock to me than the condition of the roots and their tips. The whole block of mix was like Lena indicated

“a block of very fine concrete” with hundreds of dead *Clivia* roots. Clearly a matter of: “What is left in the mix or what is short in the mix; the plant’s roots do not even want to touch it and thus try to avoid it completely!”

We watered the pots the day before repotting and that is why the growing mix shows a solid block and not dry fine sand, as in Lena’s photos. At least, it absorbed the water well.

Amazingly no earthworms were found in any of the pots. Looks like they died off due to a lack of oxygen too!

The roots of all the plants chose to sit on top of the mix and some over the edge of the pot. Please see the photos.



Rooi Kleipot '17



Roots on top of mix clearing having huge oxygen problems.



The mix 14 years later

Maybe I am biased, but to me their roots looked a bit better than the roots in Lena's photos.

What I saw was that the roots "tried to avoid contact" with the growing mix as far as possible.

To avoid this situation in future, I will be using coarse crusher sand in my growing mix.

What I was thankful for was that my plants had survived so well in the same mix for nearly 15 years. I also feel that my home made mix is near perfect, but not for 15 years!

I do not feed my *Clivia*, because I know that all the nutrition they need is in my planting mix.

Kind Regards

Sakkie Nel ▼

Clivia membership

By Sakkie Nel

Three Clivia newsletters and a Yearbook in June are issued to paid-up members each year.

No. Groups, Clubs or International individuals	2018	
1. Australia: Pay to Lisa Fox in Australia: lisa.fox@gmail.com	US\$65.00 for 3 years or	US\$25.00
2. International members: Pay to Sakkie Nel: corgas@vodamail.co.za	US\$65.00 for 3 years or	US\$25.00
3. New Zealand: Pay to Tony Barnes in NZ: tony.john@xtra.co.nz	US\$65.00 for 3 years or	US\$25.00
4. United Kingdom members: Pay to Sakkie Nel: corgas@vodamail.co.za	US\$65.00 for 3 years or	US\$25.00
5. United States: Pay at www.northamericancliviasociety.org United States: Correspondence to: David Loysen: shawhill208@gmail.com	US\$65.00 for 3 years or	US\$25.00
6. RSA Club Treasurers: Pay to the Clivia Society	No reduced rate for 3 years membership	R150.00

Students and scholars pay only 50% of the above-mentioned membership fees.

All fees received in advance by Clubs and Groups must please be paid over to the Clivia Society, with particulars of the members' names, to ensure easy and correct record keeping.

Overseas members paying: The Clivia Society's PayPal particulars:

The Clivia Society: corgas@vodamail.co.za



No. Publication	Price each
1. Yearbook 1, 3, 5 – 17 POSTAGE INCLUDED	US\$10.00
2. Digital copy of yearbook 2 & 4 (Both out of print)	US\$5.00
3. Ten or more copies of yearbooks by a Club or Group each POSTAGE EXTRA	US\$9.00
4. Book: Cultivation of <i>Clivia</i> POSTAGE INCLUDED	US\$15.00
5. Ten or more copies of Cultivation of <i>Clivia</i> by a Club or Group POSTAGE EXTRA	US\$14.00
6. Book: Kweek van <i>Clivia</i> each POSTAGE INCLUDED	US\$15.00
7. Ten or more copies of Kweek van <i>Clivia</i> by a Club or Group POSTAGE EXTRA	US\$14.00
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10. Book: Illustrated Terms and Definitions for describing <i>Clivia</i> POSTAGE INCLUDED FOR RSA	R390.00
11. <i>Clivia</i> Newsletters: Digital copies on website: www.cliviasociety.org	No charge

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2. Smalls - 7 to 10 lines	US\$5.00
3. Quarter page - 65 mm wide x 100 mm deep	US\$10.00
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corgas@vodamail.co.za

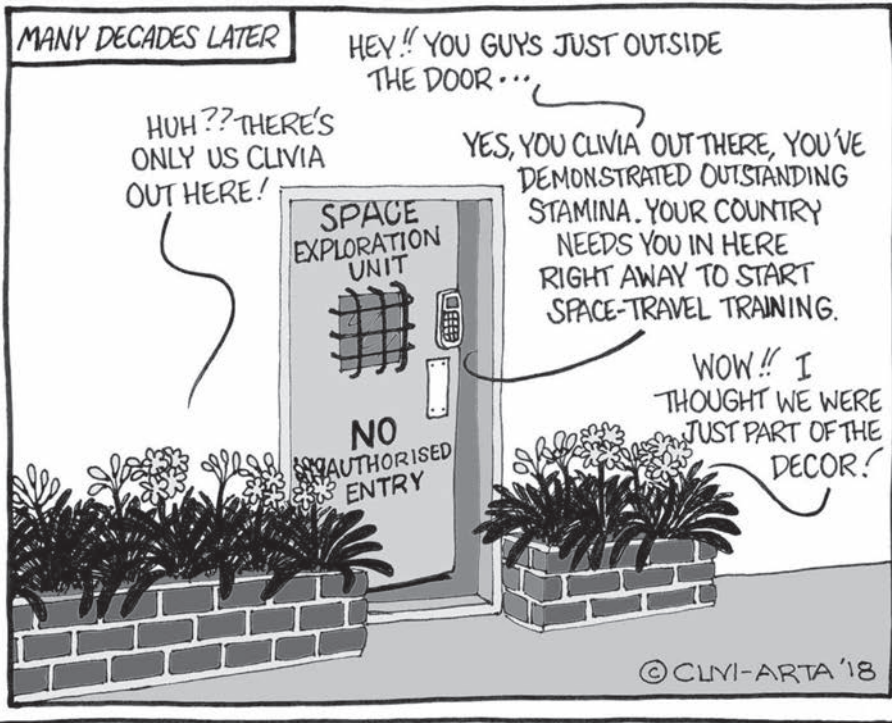
CLIVI-ARTA BY HELEN SANDERS

APPRECIATION OF CLIVIAS IN THE LANDSCAPE

IN THE 1960's



MANY DECADES LATER



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