

# Clivia Club

PO Box 74868 Lynnwood Ridge 0040 South Africa



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## EDITORIAL

Clivia publicity started off on a very good note this year with Keith Kirsten, a renowned nurseryman in South Africa, giving it an honoured place on the cover pages of his 1998 'Flowers & Gardens' diary and calendar. These depict a bed of *Clivia miniata* hybrids which are most eye catching -have you got yours yet? Val Thurston is busy writing a detailed book on Clivia with many illustrations which should be ready for publication soon and we hope that this will also help to boost their popularity.

I'm sure you will all be thrilled with the eight page colour supplement "The Clivia Review '98" enclosed with this newsletter. At last you will be able to visualise some of the species, cultivars and hybrids which have been discussed in previous newsletters. Congratulations to the team for choosing the photographs and for organising the printing of the review.

The most exciting Clivia occasion to look forward to this year is the Second Quadrennial Clivia Club Conference, details of which are given in the newsletter. We hope that many members will be able to attend and perhaps Clivia enthusiasts from other parts of the world will be enticed to join us on this occasion.

Many new members have submitted letters which have been included in this newsletter as they pose many questions and provide answers for new members wishing to join the Clivia Club. John Morris questions the possibility of the Club acquiring credit card facilities. He also submitted several articles from Australian magazines for the archives. One of them is from *Gardening Australia* January 1996 pp 26-32.

Yoshikazu Nakamura visited China last year and some earlier correspondence he had with Charl Malan is included in an article about inducing variegation in Clivia.

Minnie de Klerk enclosed a card with details about *Clivia miniata* which has been used for this edition's 'Beginner's Luck'. Ron May from Australia has submitted proof that he has had the berry with the most seed in it so far. How about making it a competition at our shows? Back to the 'Yellows'. A new one has been listed although it was first found growing in the wild many years ago. Wessel Lötter has done research to

prove that Natal A and B have a similar breeding pattern. There is much interest in bringing about mutations for either better flowers or variegation in leaves by the use of irradiation. Little is known as to how this is accomplished, and some earlier correspondence between Charl Malan and Yoshikazu Nakamura has been included to stimulate interest in this respect.

Clivia activities included a trip to look at *C. caulescens* in the Soutpansberg. As there have been no submissions for 'Personality Parade' it has been omitted this time. We hope our new members will enjoy their association with the Club.

Despite threats of drought from the effects of *El Nino*, the high veld has had good rains this season and so the Clivia should thrive again this year. The Amaryllis caterpillar is making its appearance, so examine your Clivia regularly and spray with insecticide if necessary.

Happy Clivia growing.  
Editor.

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## NEWS FROM THE COMMITTEE

**Branches.** The three active branches Kwazulu/Natal, Western Cape and Gauteng are growing well. Members who are able to be active with a specific branch are encouraged to do so. Where this is not possible for members who live elsewhere, please continue to contact the Clivia Club directly.

**The Second Quadrennial Clivia Conference.** The Fifth International Botanic Gardens Conservation Congress is being held at Kirstenbosch from 14-18 September 1998, and the Western Cape Branch proposed that the Clivia Conference also be held there immediately afterwards. This will be an opportunity for delegates to the former to be exposed to Clivias and for Club members to enjoy the plant splendour of the Cape. The KwaZulu/Natal & Gauteng Branches and the Clivia Club committee have accepted the offer with pleasure, there being the added benefit of rotation of the activities of the Club between regions. The provisional September '98 programme is now:

Sat 5 : Gauteng Clivia Show

Tue 8: Thu. 10 : *C. caulescens* excursions

Sat 12 : Kwazulu/Natal Clivia Show

Sun 13- Mon 14 : *C. miniata/gardenia* excursions Wed 16- Thurs 17 : *C. nobilis* excursions

Sat 19- Sun 20 : Western Cape Clivia Show

Sat 19 : The 2nd Clivia Club Conference at Kirstenbosch

Sun 20 : Clivia visits and tours of Kirstenbosch Gardens

This programme allows members to participate as much or as little as they are able to, with allowance for travel time between centres. To facilitate planning, please inform us of the possibilities of your participation as early as possible. Details of specific sections will be included in the Newsletter, and enquiries regarding regional programmes and local accommodation and transport should be made directly to:

5-10/9/98 Frikkie Potgieter, 27-12- Tel 3354590 fax 9910843

12-15/9/98 Val Thurston, 27-322- Tel 41316 fax 28028

17-18/9/98 Charl Malan, 27-461- Tel 311086 fax 27283

19-22/9/98 Joy Woodward, 27-21- Tel 7621166 fax 7970002

The Clivia Review '98. The first edition of the review accompanies all copies of the Newsletter being distributed in January 1998, and we hope that it will be of much interest to members who previously had only written descriptions of plants discussed in the Newsletter. Future editions will include selected articles. Please let us have suggestions for improvement of the Clivia Review and swamp us with contributions for '99, including the names of the clone, owner and photographer and a brief synopsis of the plant's merit. Many thanks to Kees Sahin (The Netherlands) and Michael Jeans (UK) for their stimulating ideas, and the Gauteng Branch which has sponsored the total cost.

Seed distribution. Response to the seed distribution scheme has been overwhelming with over R6000 being held on deposit. To recap on how it works, interested members are asked to send in a list of the types of seed that they are interested in together with a deposit of R50. As soon as seed is received it can then be divided and mailed directly to those who are interested. Please note that in some cases the sender of seed places geographical restrictions on its distribution.

Yoshikazu Nakamura, our generous honorary member from Japan has informed us that he is sending the Clivia Club some "yellow x Vico yellow" and "variegated 5% yellow" seed. These will be sold to participating members at R9 and R7 respectively. Interested members who want seed but who have not yet registered under the seed scheme must inform Elda de Witt on 'phone/fax (012) 991 0843 by 6 February. Those who are registered must if necessary immediately send in funds to update their deposits.

Yoshikazu Nakamura generously donates 40% of the proceeds to the Club. This offer is limited by him to South African members only and overseas members who wish to purchase his seed may approach him directly on fax 81 - 475- 23544.

From the membership administrator's desk.

1. All address and telephone/e-mail/fax changes must please be sent to Clivia Club's main address in Pretoria, RSA. Especially those of you where street deliveries are discontinued. This way we can be sure that you always receive your newsletter!
2. The renewal notice for the 1998 membership will accompany this newsletter. Please return it with your remittance as soon as possible. We regret that we are unable to send newsletters to non-members. No additional reminders will be sent. Members who have already paid will not receive a notice. The Australian members will also not receive a notice because they work through Ken Smith (tel. 47 54-3287).
3. Some statistics: In the October 1997 newsletter the membership figures were given as at the end of Clivia Club's financial year. As the shows create a fair growth in numbers this is a good time to look at them again. We always gain some and lose some but membership increased by 48% since October 1995 from 270 to around 400 as at the 4th December 1997.

The non-African countries currently have 54 members with Australia 28, USA 12, UK 8, NZ 3, Belgium, Japan and Sweden 2 each and France, P.R. of China, Switzerland and The Netherlands 1 each. Zimbabwe has 2 members and RSA 344.

In the RSA we have grown by 27.8% since 14 August 1997. Gauteng has 158 members, Western Cape 64, KwaZulu/Natal 57, Eastern Cape 23, Northern Prov 17, North West 9, Mpumalanga 9, Free State 6 and

Northern Cape 1.

Treasurer's Report. This will be published in the next newsletter as the Central and Gauteng Branch funds are being separated.

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### **CLIVIA 98: CAPE TOWN: 19- 20 SEPTEMBER 1998**

The Cape is one of the world's richest floral kingdoms where over 8000 species are indigenous to this area. Approximately 5000 of these can be viewed at Kirstenbosch National Botanical Garden which is situated on the eastern slopes of Table Mountain. It is here that CLIVIA 98 will be held. The genus *Clivia* is endemic to South Africa. Specimens collected from the Eastern Cape in 1828 were described by Lindley as "*Clivia*" in honour of Lady Clive, Duchess of Northumberland. In 1888 a yellow flowered mutation of *Clivia miniata* was found in the forests of Natal. The enthusiasm for *Clivia* has accelerated across the globe.

CLIVIA 98 will take place on 19 and 20 September 1998. Saturday will be taken up with presentations and reading of papers while Sunday will comprise visits to *Clivia* collections and other places of interest to gardeners surrounding Cape Town. This will include a visit to the annual *Clivia* Show at Kirstenbosch and a tour of Kirstenbosch Gardens including the new Conservatory, and the Kirstenbosch *Clivia* collection. There will also be pre and post conference tours which will provide an opportunity for delegates to experience the richness of the Cape, to enjoy the sights of the Peninsula and the wealth of flora, to visit a wine estate, and depending on the timing of the winter rains, to see the spectacular colourful show of Namaqualand spring wild flowers.

The theme of the Conference is GROWING CLIVIA, the focus being the cultivation of these magnificent plants. We are hoping to have a number of authorities who will share their expertise at this coming together of *Clivia* enthusiasts.

John Winter.

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### **CORRESPONDENCE**

Enquiries from an Amaryllid fan  
From Daryl Geoghegan

6 Waratah Way, Wodonga 3690, Victoria, Australia

March 1997

Dear Treasurer,

I am very interested in becoming a member of your club. I do grow some *clivia* species and hybrids here at my home. I have a growing passion for Amaryllids from South Africa. I would like to eventually buy seed from you, hopefully.

I look forward to your reply.

Kind regards

Daryl.

..\*..

Reply from the *Clivia* Club 17 March 1997

Dear Daryl

How nice to have contact with another Clivia enthusiast!

Seed of the rare hybrids are not always easy to get hold of. However by becoming a member and paying a "seed deposit" you become entitled to share in special seed, should some be made available to the club.

We have a newsletter which is sent out quarterly. This contains news and views on cultivation, crossings etc. In these letters you may also find details of members willing to swap or sell seeds and plants of different hybrids and species.

To whet your appetite further, I include the first newsletter of 1997 as well as a membership application.

Looking forward to hearing from you.

Regards  
Elda de Witt

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From Daryl Geoghegan      3 April 1997

Dear Elda

Thank you for your response to my query. Please find enclosed my application form and cheque in Australian dollars. I have been buying seed from Silver Hill Seeds in Kenilworth. They recently sent me Kirstenbosch Yellow seed for R300 for 50 seeds. Is this an okay price? Maybe the club would have cheaper seed? Too many questions. That's why I wanted to join a club where people specialise.

I grow Amaryllids from R.S.A. and my passion is growing year by year. Not many people in Australia grow these geophytes, trying to complete genus collections, mainly for the \$. Is it possible to obtain, say *Brunsvigia* or *Boophane* or *Haemanthus* seed from the members living near endemic stands of bulbs?

I must say my appetite was certainly whet, Elda. I do look forward to your reply.

Kind Regards  
Daryl

P.S. I also wrote to Mr Nakamura. Is seed cheaper via the club?

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From the Clivia Club 6 August 1997

Thank you for your letter of 3 April 1997. Welcome to the Club! As you will now start receiving letters on a regular basis, I can guarantee your "lust" will not subside. The price you paid for the yellow seed is fair and in line with prices here. You sure are lucky to have gotten so many.

I do grow *Boophane distichia* which is endemic to the area where I live. I can send you an adult bulb or two (they are  $\pm$  10 cm in diameter). Please just let me know if your country allows the import of bulbs. I will speak to some members and try and find you some *Haemanthus* and *Brunsvigia* seeds. Nakamura is a very

gracious man. He may even send you a few seeds as a gift, but he does not usually sell seeds himself!

There are quite a few avid Clivia growers in Australia of which Ken Smith of 593 Hawkesbury Road, Winmalee, NSW is the best known. Contact him at: (6147) 543287.

Do send us some photographs of you (and family) and your plants. Putting a face to a letter makes for much more fun.

Enjoy your plants. Hope to hear from you soon!

Clivia greetings

Elda de Witt (Public Relations Officer)

*Most of our indigenous bulbs are protected, therefore it is not legal to obtain seeds or bulbs from the wild. However many Clivia growers are also Amaryllid or indigenous plant enthusiasts and they may send you seed from their collections if and when it is available. I hope that you will have some response from our members. Buying seed from a seed company, such as the one you mention in Kenilworth, is probably the best way to obtain seeds as it is legal and the company cannot afford to send you indifferent seed as their reputation would be at stake. Editor.*

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#### **Membership enquiries**

From Michael Bertram

15 Highfield Avenue, St. Georges, South Australia 5064

13 June 1997

The Membership Secretary

Dear Sir/Madam

Following recent correspondence with Graham Duncan of the Kirstenbosch Botanical Garden, he mentioned that I should enquire regarding joining your specialist club as I am interested in growing *Clivia miniata* var. *aurea* (yellow) and a reportedly fragrant cream coloured *Clivia miniata* hybrid/selection from seed.

My current collection includes *Clivia nobilis* and *C. miniata* (colours ranging from pale orange through to deep orange, ageing to deep red).

I live in Adelaide, the capital of South Australia (Latitude 35 degrees South), with a similar climate to Cape Town (cool wet winters and hot dry summers), enabling me to grow a diverse range of plants ranging from cool temperate through to subtropical species.

My contact numbers are: Phone 61 883792859, Facsimile 61 883795198, E-mail [martreb@hotmail.com](mailto:martreb@hotmail.com) or I may be contacted at the above address. Do you have a facsimile line available for correspondence?

Looking forward to receiving membership details in the near future. With best wishes. Yours sincerely,  
Michael Bertram

*The secretary of the Clivia Club, Elda de Witt, replied to this letter and sent application forms for*

*membership and the seed bank. She also included four of her own yellow Clivia seed. She asked where he had heard about the fragrant cream coloured Clivia miniata. Ed.*

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22 August 1997

Dear Elda

Thank you very much for forwarding an application form for membership o~ the Clivia Club and the *Clivia miniata "citrina"* seeds from your personal collection. I have planted the seeds and eagerly await their germination in the ensuing months.

I once read about an Australian grower who was cultivating a fragrant cream coloured *Clivia miniata* selection and I assumed that the original plant material came from South Africa. I have been unable to find the article since it was written a number of years ago but I will endeavour to track down the author and consequently the source of the stock. This *Clivia* could possibly be a pale version of the cultivar 'Kirstenbosch Yellow' which I understand to be fragrant (*Cape Bulbs* by Richard L. Doutt). Do you have access to any seed of this cultivar?

Please find the completed application form for my 1997 and 1998 memberships and seed bank deposit included (\$70 in US notes attached). Can you please include details relating to benefits of both membership and the seed bank deposit? Is payment for Membership and other purchases possible at this time by credit card i.e. Visa.

I am interested in obtaining a quantity of *Clivia miniata* var. *citrina* and other yellow selections seed -about 200 seed -would these be available through the seed bank? Other colours of *C. miniata* that I would like to grow are salmon pink and red.

I will post some photographs of my personal collection in the next few months. Can you please include a 1995 and 1996 back volume with the current 1997 volume? Looking forward to receiving the *Clivia gardenii* and *C. caulescens* seed and back volumes in the near future and enjoying a long mutual association with you and the club.

Kind regards

Michael Bertram

*Clivia and many other South African species appear to grow very well in Australia as the climates are so similar to that of South Africa. I have friends in Sydney who say that Clivia grow like weeds in their garden and that even the cat and dog romping on them appear to do them no harm. See the reply to the next letter regarding credit cards. Editor.*

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### **Request for credit card facilities**

From John Morris

13 Simmonds Street, Balmain NSW 2041, Australia

23 July 1997

Dear Koos

In response to a recent circular on Seed Deposits I completed the form and returned it with a bank draft for R150 which was close to US \$30. The cost of the bank draft was A\$55.73. About 20% was the bank charges. On reading the Club journal I am often tempted to write away for some small item (such as the membership list) but the cost of bank drafts stops me doing so.

After that preamble the purpose of this letter is to ask if the club would investigate the introduction of credit card facilities. I have a VISA card and can order seeds, magazines, books and tapes from all around the world and simply have the charge debited to my account. I realise that the Club is not a commercial operation and that fees are charged to the suppliers of goods and services. I do believe however, that with the growth in Club membership and the increasing use of e-mail and the internet that it will be inevitable one day. Why not now? It might even make your life easier with fewer cheques to bank.

Yours sincerely  
John Morris.

*Your point is noted and the possibilities have been investigated. Your suggestion is not at present economically viable. No doubt, as you say, the time will shortly arrive when credit card facilities will be introduced. Australian members can contact Ken Smith as he has in previous years sent over one bank draft with all the Australian subscriptions. This saves both the Australian members and the Clivia Club an enormous amount in bank charges. Editor:*

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#### **News from Yoshikazu Nakamura**

4-28, Kurodo, Mobara-city 297, Chiba Prefecture, Japan  
18 August 1997

Dear Mr Lötter

How are you?

I am sending you the pictures which were taken when I went to inspect Clivia in China. I heard that Clivias are very popular in China, but they were shown only at two places during the show. However, I met some very kind people there and I was able to see some nurseries.

I have placed an advertisement on guide books at shows, but would not be able to see any reactions of people until much later.

The plants you gave me have grown up strongly. Some of the plants have not flowered yet, so I am looking forward to seeing the flowers.

Yours sincerely  
Yoshikazu Nakamura

*Mr Nakamura certainly travels far and wide to see Clivia! I hope that we will be seeing him again at our Clivia festivities this year.*

*The photographs showed miniature Clivia with very short broad leaves. The leaves were almost as broad as*

*they were long and the berries were borne on a very short peduncle -almost like a case of "dwarfism" in plants. Editor.*

..\*..

**'n Kaartjie vir die argiewe**

Van Minnie de Klerk Posbus 35386, Menlopark 0102

16 Oktober 1997

Ek is 'n nuwe lid wat tydens die Skou aangesluit het, en is baie bly dat ek alreeds so baie uit die boekies kon leer. Ek het drie pakkies saad gekoop, maar het vergeet watter soort dit is. Kan jy dalk help asseblief? Die saad het pragtig ontkiem en daar is drie wat nog niks wys nie.

Ek sluit 'n baie interessante kaartjie in vir julle argief en ook dalk vir die kleurbyvoegsel wat nog gaan verskyn. Ongelukkig kan ek glad nie onthou in watter tydskryf dit verskyn het, want dit kan dalk vyftien jaar of langer gelede wees. Die uitspraak van die naam, sowel as die "Kaffir Lily" is nogal interessant. Ek het vir baie jare, en selfs vandag nog, probleme met mense wat nie die regte uitspraak gebruik nie.

Ek het drie tweelingplante en sal dalk nog twee wat ek weggegee het, terug kry. Ek het nou ook die les geleer om niks wat nie gebloom het of waarvan ek nie seker is nie, weg te gee nie.

Sal die saad van die tweeling ook so wees, of moet ek maar wag en sien? Ek sien uit na die volgende boekie.

Beste wense aan almal  
Minnie de Klerk.

*Dankie vir u brief en die ingeslote kaartjie, Mev de Klerk. Ek sal liewers u vrae in Engels antwoord.*

*I am afraid that I am unable to identify the seed you bought without knowing more about it. From whom was it purchased, how much did you pay for it and what does it look like? Ordinary C. miniata seed will be about 50 cents a seed, C. nobilis (smaller, whiter, rounder seed) will be a bit more expensive and "citrina" seeds can be anything from R5 to R70, depending on the source.*

*There is one clue which may indicate whether you have yellow or orange C. miniata. If the bases of the stems are green they will probably be yellows, whereas ordinary orange C. miniata have purplish leaf bases. They show this coloration best in the first year and then the purplish coloration disappears, so you must separate the yellows from the oranges at an early stage. In any case you will have to wait for 4 or more years until they flower to see what you have bought!*

*Thank you for including the card with the information about Clivia miniata. It is so succinct that I am going to reproduce it for the newsletter. Unfortunately I will not be able to use the picture. The correct pronunciation is with the long 'i', but most people in South Africa pronounce it with the short 'i'. Why was it not spelt 'Cliveia' if it was meant to be pronounced that way?*

*The seed from your 'twins' may well produce plants which also have two flower heads at the same time, but not necessarily so. As you say, you will just have to wait and see.*

*Have fun with your Clivia. They are most rewarding plants to grow, and even if you have to wait a long time for them to flower after growing them from seed, the deferred gratification when they do flower is well worth the wait. Editor.*

..\*..

**A record number of seeds in one berry?**

From Ron May                      11 Loch St., Toowoomba, Queensland 4350, Australia

12 December 1997

Dear Meg

Re Dries Bester's letter in Vol. 6 No.4 Newsletter on the number of seeds taken from one Clivia berry.

Enclosed are three photos taken of my record size berry, containing 27 seeds, 9 seeds to each of the three membranes.

Can anyone top this?

Kind regards  
Ron May

*Twenty seven seeds in one berry will take some beating! Was this exceptionally large berry the result of artificial pollination? I find that the flowers which are more accessible to me are the ones that have the largest berries because every time I pass them I cross pollinate them with my fingers. Editor.*

## **Mvuma Yellow**

From Fred van Niekerk

Wingerd Road, Somerset West 7130

29 November 1997

After reading the recent contribution on *Clivia Citrina* by Brian Tarr in the October Newsletter, I felt it necessary to share my knowledge on a possible seventh variety.

During September 1978, Mr and Mrs Ian and Colleen Goble drove to view the tens of thousands of naturally growing *Clivias* on their farm Mvuma, in the Upper Tongaat area (KwaZulu/Natal). To their delight they discovered a pure yellow *Clivia*, which they subsequently removed to plant in their own garden. Surprisingly they also discovered an apricot-coloured variety.

To the knowledge of the Gobles, no seed or suckers of this particular *Citrina Clivia* has ever left Mvuma, except in 1993 when a *Citrina* sucker was given to my brother the late Dr. Barney van Niekerk. That plant flowered in 1996 and 1997 and produced a very beautiful vibrant yellow, full flower with broad petals which faded to a pale cream with age. (See the enclosed photographs).

I was fortunate enough to receive a sucker from my brother during this year, which I hope will flower within the next two or three years. Barney's wife, Beatrix, is presently preparing the *Clivia miniata* var. *citrina* cv. "Regal" for the *Clivia Show* in Pretoria in 1998. We are holding thumbs that it will flower at the right time and live up to our expectations.

Regards  
Fred

P.S. I also have a *Clivia nobilis* which I discovered on the Wild Coast, South of the Wild Coast Inn. This plant has a rather broad and long leaf. I believe this could be the most Eastern point that one of these cultivars has been found.

*Thank you for the information about the yellow Clivia found at Mvuma. It may well be another variety and the information has been sent to Brian Tarr. We hope that we will be able to see it at one of the shows this year, depending on when it flowers. The photograph may be suitable for the next Clivia Review. Editor.*

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## **BREEDING BEHAVIOUR OF NATAL YELLOW**

There are exciting results of research into the odd breeding behaviour of Natal Yellow. In my letter (page 11 of January 1997 Newsletter) I announced that I was able to identify two different clones of Natal Yellow which I named A and B. Experiments have now proved that these two are in fact two different clones of the very same thing.

The reason why it was hitherto not possible to breed yellow from Natal Yellow by means of seed is the fact that it is not self pollinating as many claim, that if crossed with true yellow, only orange flowering plants were produced and that A and B were never brought together for cross pollination.

In order to test Natal Yellow B for selfing, I secluded it in a room away from any other clivias and pollinated each flower every day with its own pollen but it aborted all the ovaries. Two further attempts were made by me by using the pollen from plants claimed to be other clones such as Jardine and Giddy with the same result. Natal Yellow, Jardine and Giddy are therefore synonymous. Christo Lötter made two attempts to self it, the first in the usual way, but it also failed. In his second attempt he cut the style and treated it with a sugar solution prior to pollination. This was met with some success. Four seeds were produced and the resulting seedlings were all unpigmented i.e. green. When I visited Fred Gibello in August 1994 he had several of these plants from the same clone in flower without any other clivias in flower being present. No berries were produced. When I visited him again in December 1997 there were berries on his Natal Yellow. He told me that other flowering clivia were present and that the seedlings from the previous year's seed are all pigmented. There is therefore enough proof that Natal Yellow does not self and claims to the contrary must be attributed to the fact that the necessary precautions to avoid inadvertent pollination were not taken.

I could not test A for selfing as I did not have one at my disposal for the experiment but was fortunate enough to use its pollen on B as well as on the F1 progeny of B. This research proved that the inheritance, of Natal Yellow is on a par with that of a true yellow and like a true yellow the inheritance is recessive. Furthermore, to differentiate Natal Yellow and its future yellow progeny from true yellow, I would like to suggest the name "par yellow".

Here are the results and the persons responsible for it.

- 1 True Yellow x Natal Yellow B  
100% orange. W.J. and G.J. Lötter
- 2 Natal Yellow A x True Yellow  
100% pigmented seedlings. N. Weitz
- 3 True Yellow x Natal Yellow B  
F1 orange x Natal Yellow A  
6 pigmented and 6 unpigmented seedlings. W.J. Lötter
- 4 Natal Yellow A x True Yellow  
100% orange. Graham Duncan
- 5 Natal Yellow x Kirstenbosch Yellow  
F<sub>1</sub> orange x Natal Yellow B  
50% pigmented and 50% unpigmented seedlings. C.J. Lötter.
- 6 Natal Yellow x Kirstenbosch Yellow  
F<sub>1</sub> orange x True Yellow  
50% pigmented and 50% unpigmented seedlings. C.J. Lötter.
- 7 Natal Yellow B x Chubb's Peach  
100% orange. Sean Chubb.

- 8 Natal Yellow B x Chubb's Peach  
 F<sub>1</sub> orange x Natal Yellow A  
 11 pigmented and 13 unpigmented seedlings. W.J. Lötter.
- 9 Natal Yellow B x Natal Yellow A  
 50 seedlings, all unpigmented. W.J. Lötter.
- 10 True Yellow x Natal Yellow  
 F<sub>1</sub> orange x F<sub>1</sub> orange has not been done as it will not be possible to differentiate between true yellows and par yellows in the progeny. Just as a matter of interest I predict the following result: 56,25% orange and 43,75% yellow made up as follows:
- (a) 6,25% orange
  - (b) 12,50% orange/true yellow
  - (c) 12,50% orange/par yellow
  - (d) 12,50% orange/true and par yellow
  - (e) 6,25% true yellow
  - (f) 12,50% true yellow/par yellow
  - (g) 6,25% par yellow
  - (h) 12,50% par yellow/true yellow
  - (i) 6,25% true yellow and par yellow at the same time but all signs of the par yellow factor like spots on the flowers or berries will be masked by the true yellow factor.

In view of the fact that you are combining two different lines of inheritance of yellow, you double the chance to produce it. The expected yellow from a single mutation F<sub>1</sub> orange x F<sub>1</sub> orange is only 25% and in the double mutation it would have been 50% if it was not for the combination of the two yellow factors in 10 (1) above.

I regard the results of this research as the most important breakthrough in the breeding of clivia but breeders will in future have to keep proper records of their true yellows and par yellows or otherwise they will still be puzzled by the vast number of orange progeny in their yellows.

Wessel J. Lötter.

*How very interesting that Natal Yellow is self-sterile! It is such a pity that such a beautiful flower does not throw yellows in the ordinary course of events. Thank you for sharing the results of your research with us, Wessel. Editor.*

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## **VARIEGATION IN CLIVIA LEAVES**

In Japan Clivia are very popular as house plants because of the beauty of their dark shiny leaves which are a year round attraction, unlike the Clivia flower which is only present for about three weeks of the year. Clivia with variegated leaves are also in great demand because the diversity of their markings makes them more interesting to look at. Yoshikazu Nakamura specialises in Clivia with variegated leaves to satisfy this

market.

Variation in the leaves of Clivia sometimes occurs spontaneously due to a mutation which may have been the result of a damaged gene. It could have been caused by background radiation which comes from space and from radioactive material present in the soil, in the air, in water, and in building materials. More often these mutations are induced by physical or chemical means. One way of changing the genetic pattern of plants is to treat them with Colchicine, a drug better known for the treatment of gout.

Another method used to change the genetic structure of plants is by irradiating them with gamma rays. Gamma rays are a form of electromagnetic radiation similar to X-rays. They are very penetrating and will pass through an organism causing cellular damage as they travel through. Cobalt-60 ( $^{60}\text{Co}$ ) is the radioisotope most commonly used for this purpose. In humans gamma radiation is used to treat tumours especially when they are deep-seated and inoperable. No incision is needed and there is no need for anaesthesia. Hospitals use large machines containing a cobalt "bomb" to supply gamma radiation directly to a cancer site. Gamma rays in smaller doses are used for irradiating food to kill insects and micro-organisms and also to halt the ripening of fruit. Irradiation lengthens the shelf life of the food and reduces the need for preservatives, some of which have toxic effects. If Clivia seeds are exposed to the irradiation process by subjecting them to very low doses of gamma rays their cellular structure can be changed resulting in genetic mutations.

Charl Malan wrote to Mr Nakamura in January 1994 and asked him how the irradiation was done. This was his reply:

I apply Cobalt 60 gamma as you have stated in your letter.

If you want to apply 1krad (kilorad) for an hour, it means that you apply 1 krad over the one hour, so write as 1 krad/h.

But recently the unit has changed and now we use  $100 \text{ rad} = 1 \text{ Gy}$  (gray), so 1 krad (1 krad/h) equals 10 Gy (10 Gy/h). The SI unit is known as a gray which is the unit for absorbed dose of radiation. For example, 500 rad is the same as 0.5 krad and 0.5 krad (0.5 krad/h) is the same as 5 Gy (5 Gy/h).

So please describe 00 KR from now on,  $\square \square \text{KR}$  per 1 hour for  $\square$  hours for safe and expected result. Please produce lovely new varieties through patient observation. (Translated from Japanese by Mrs Y Dobson).

I hope that this makes sense to some of you. Those of you who have access to radiation equipment, now know what to do! I would rather buy seeds from Mr Nakamura, as these come from plants which have already been irradiated and which have passed on the defective gene. I wonder how many seeds are destroyed in the exercise?

Many Clivia Club members are now sporting large plants with variegated leaves which came from seeds sent over by Mr Nakamura in 1993 and 1994. The 1993 plants have conspicuous broad leaves and were probably seeds from Daruma stock as they are not very big plants, whereas those grown from 1994 seed have longer, narrower leaves. As variegated leaves have less chlorophyll in them the plants generally grow more slowly than those with normal dark green leaves. The variegation even varies from leaf to leaf on the

same plant, and each year one is surprised by the varieties of stripes which are apparent on one plant. Once these have matured we will probably see many exciting entries in the 'variegated leaf' section at our shows

The following diagrams are Mr Nakamura's index to different forms of variegation.

## CAULESCENS TOUR -7 TO 9 NOVEMBER 1997

The perks of being a Clivia fanatic are incredible! Here are some random thoughts on the trip - too much talking - taking the wrong turning almost ending up in Tzaneen instead of Louis Trichardt boiling at a temperature of 40°C which we thought was normal for Levubu, but actually they were having a heat wave! cooling off on the lawns of the charming B & B, the Loerie Inn, with hosts Else and Marius Schrenk looking after us.

On Saturday driving over Levubu's 'duike en dales' (hills and dales) - through Thohoyandou and Sibasa. into the Soutpansberg (salt pan mountains). admiring the magnificent view over the Albasini Dam and the flat bush veld from the escarpment learning about the Venda People.. ...seeing *Gerberas* In the wild... ..walking and climbing in the Thathe Vondo Forest (holy to the Venda people) having a picnic lunch at a waterfall:...looking down onto the sinister lake of Fundudzi an old centre of tribal sacrifice and superstition, situated in the valley of the Mutale River... ..chocolate cake and tea at the Bester's in the tranquillity of late afternoon.. ...doing business with generous people.. ...talking late into the night with splendid friends while listening to the calls of a pair of owls.

Next day, an early morning drive into the Entabeni-SAFCOL forest area (not accessible without a permit).... more climbing to look at indigenous Clivia .....tea with more wonderful and generous people, Bertie and Ansie Le Roux .....viewing their marvellous Clivia and the beginnings of Ansie's Clivia terraces..... all of this while on a Caulescens tour with a superb guide in the luxury of an air conditioned 4x4!

Coming home with a boot full of plants and suitcases on the back seat. feeling as though the old car had power steering due to the weight in the back.. ...arriving home to a husband glad to see you. where did we pack the paw-paws and the tins of Levubu litchis and fruit salad!?

Thanks especially to Dries Bester, our guide and driver, and also to Hanneltjie and Driesman Bester and Bertie and Ansie Le Roux from Heine and Louise Liebenberg, Meg Hart and Adri Haxton.

Adri Haxton

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## NEW MEMBERS

The following are the new members as at 5 December 1997 and we wish them a hearty welcome to the Clivia Club.

### AUSTRALIA

Michael Bertram, 15 Highfield Avenue, St Georges, SA 5064, (Adelaide), S Australia

### SOUTH AFRICA

Edna Borchers, Washingtonstraat 45, Boston 7530, (Bellville), W Cape

Robbie Botes, Posbus 19075, Linton Grange 6015, (Port Elizabeth), E Cape

Ernst Botha, Fred Nicholsonstraat 271, Les Marais 0084, (Pretoria), Gauteng

Charl & Martinette Coetzee, Great West Way 196, Port Elizabeth 6025, E Cape

Roy & Constance Danford, 3 Pienaar Road, Milnerton 7441, (Cape Town), W Cape

Wilhelm Gericke, Paarl Mediese Sentrum 11, Berlynstraat, Paarl 7646, W Cape

Tickey & Wendy Gill, 127 South Avenue, Atholhurst 2196, (Sandton), Gauteng

Wendy & Colin Gold, PO Box 94, Eston 3740, KwaZulu/Natal  
David & Ellie Graaff, Posbus 51261, Wierda Park 0149, (Centurion), Gauteng  
Ilse & Hans Hahn, 222 Richard Street, Hatfield 0083, (Pretoria), Gauteng  
Eric Heine, Groeneweide 10, Stellenbosch 7600, W Cape  
Gustav Johannes, Posbus 215, Piet Retief 2380, Mpumalanga  
Pieter Labuschagne, Posbus 1789, Potchefstroom 2520, North West  
Marius Meiring, Posbus 3564, Noord Einde 6056, (Port Elizabeth), E Cape  
Irene & Ryk Nagel, Posbus 2431, Fourways 2055, (Sandton), Gauteng  
Brian Nel, 1 Kestrel Road, Kreupelbosch, 7945, (Cape Town), W Cape  
Hans Potgieter, Gasconysingel 84, Pentagon Park 9301, (Bloemfontein), Vrystaat  
John & Gail Reed, PO Box 1114, Pietermaritzburg 3200, Kwazulu/Natal  
Craig Smith, PO Box 32, Mid-Illovo 3750, Kwazulu/Natal  
Elna & Bambi van Niekerk, Posbus 65, Hunters Retreat, Port Elizabeth 6017, E Cape

### **THE NETHERLANDS**

Gerrit Oskam, Plantsoensteeg 6, Wijk bij Duurstede, 3961 CB,

### **UNITED STATES OF AMERICA**

Hodge & May Amemiya, 2733 orange Avenue, Torrance, CA 90501, (Los Angeles), California  
George Dunning, 18 East 84th Street, New York, NY 10028  
Heinrich & Martha Malling, Route 8 Box 64 C, Chapel Hill, NC 27514, North Carolina

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### **E-MAIL ADDRESSES**

Additional e-mail addresses as at 5 December 1997

### **AUSTRALIA**

Michael Bertrammartreb@hotmail.com

### **RSA**

Robbie Botes rtsbotes@i ntekom .co.za  
Bruce Gemmell gemmell@lantic.co.za  
Tickey & Wendy Gill tickgill@iafrica.com  
Anne Handley irydany@dbn.lia.net  
John Winter winter@nbict.nbi.ac.za

### **UNITED STATES OF AMERICA**

Heinrich & Martha Malling mailing@niehs.nih.gov

### **ZIMBABWE**

Graham Mills millspeto@mail.pci .zw

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### **FORTHCOMING EVENTS GAUTENG**

#### **GAUTENG**

Sat 14 February 1998 Club meeting -'Yellows' by Wessel Lötter

Venue	National Herbarium, Pretoria National Botanical Garden
Time	14:30
Entrance fees:	R5,00 for the Pretoria National Botanical Garden
Sat 16th May 1998	Club meeting -Propagation of Clivia by Dr. Mycock
Venue	Floream, Johannesburg Botanical Garden, Emmarentia, JHB
Time	14:30
Sat 15 July 1998	Club meeting -Taxonomy
Venue	National Herbarium, Pretoria National Botanical Garden
Time	14:30
Entrance fees	R5,00 for the Pretoria National Botanical Garden
Sat 9 September 1998	Gauteng Clivia Club Show
Venue	National Herbarium parking area, Pretoria National Botanical Garden
Entrance fees	R5,00 for Pretoria.National .Botanical Garden + R2,00 for Clivia Club
Show Times	09:00- 15:00
Sat 31 October1998	Club meeting -Details of talk to be given later
Venue	National Herbarium, Pretoria National Botanical Garden
Time	14:30
Entrance fees	R5,00 for the Pretoria National Botanical Garden

#### **KWAZULU/NATAL**

Sat 16 September	KwaZulu/Natal Show.
Venue	Pietermaritzburg Botanical Garden
Times	13:30- 16:00

#### **WESTERN PROVINCE**

Saturday 19 September Second Quadrennial Clivia Club Conference and Show  
 Sunday 20 September Clivia visits and tour of Kirstenbosch Gardens  
 Venue: Kirstenbosch National Botanical Garden  
 For details contact John Winter: Tel. Home (021) 7622416 Work (021) 7629120

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#### **FOR SALE**

Membership lists. Full membership lists are available from the club for R20 (\$10 US dollars or equivalent).

Seeds. Please remember to send R50 seed deposit to Koos Geldenhuys if you wish to purchase seed from the Clivia Club.

*C. miniata* and *C. gardenii* plants for sale at all ages - R12,00 and down. Phone Sean Chubb at (0325) 81978

*C. nobilis* seed for sale @ 50c/seed. Phone Charl Malan at (0461) 311086 after 18:00

Quality Clivias at reduced prices for sale at *CLIVIA HOUSE* in Pretoria. Contact Glenn on cell: 0832847223 for more information and orders.

Fertiliser. For the convenience of Gauteng members, a supply of 1:0:1 and 4:3:4 fertiliser (recommended by Gerhard Reyneke) has been obtained and is available at cost - contact Connie Abel on (012) 476406.

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## **BEGINNER'S LUCK**

*The following description of Clivia miniata has been taken from the card sent in by Minnie de Klerk and was published by Tree Communications in 1978. One side of the card depicts an orange Clivia miniata and the other a description of the plant.*

### **CLIVIA MINIATA** (KLYE-vee-uh min-ee-AY-tuh)

Native to South Africa, these spectacular tender-flowering bulbs are members of the amaryllis family. They have broad, strap like, arching green leaves and large, rounded clusters of trumpet-shaped blooms of orange-red with yellow throats. The flowers appear in spring or early summer on a tall, succulent stalk, and are followed by red berries.

Size: Leaves, 18 in (46 cm) long and 2 in (5 cm) wide; stalk, 12-15 in (30-38 cm) long; flowers, 3 in (8 cm) long; berries, 1 in (3 cm) across.

Light: Moderate sunlight.

Flowers last longer with lower light levels.

Water: Let soil surface become slightly dry between thorough soakings when actively growing and flowering, from late fall until summer. Let the soil dry out between waterings in the fall, but never let the plants wilt.

Humidity: Moderate.

Temperature: 65-75°F (18-24°C) days and 50-60°F (10-15°C) nights. In areas without frost, clivia can be grown outdoors.

Fertiliser: Feed monthly with flowering-houseplant fertiliser when actively growing.

Propagation: Divide bulbs in late spring, after flowering.

Repotting: Plants bloom better when pot bound, so repot, using standard potting soil, only when very crowded. Cover the top of the bulb with 1 in (3 cm) of soil.

Pests: Aphids, mealybugs, spray with malathion.

Grow ability: Moderately challenging

Gardener's note: Flowering-size plants are often rather expensive, but worth the immediate effect. Younger, less expensive plants may take several years before they bloom. Several named varieties and hybrids are

available with flowers in other shades of red, yellow, and orange.

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### **ON THE COMPOST HEAP**

I am so pleased that the Second Quadrennial Clivia Club Conference is to be held at Kirstenbosch as it is so beautiful in the Western Cape. I also think it is a good idea for the branches to take turns in hosting conferences. Perhaps the KwaZulu/ Natal Branch will host the 2002 conference, especially as most Clivias grow there.

I am thinking of having a low dose of irradiation to change my markings so that I will not be recognised. Perhaps I will then be left in peace!

Yours  
Lily Borer

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