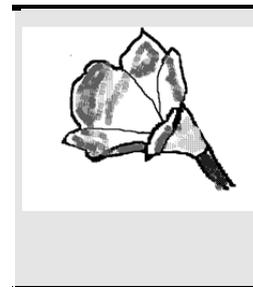


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Clivia nobilis and Clivia x cyrtanthiflora in Australia

The pendulous flowered Clivias are less noticeable in our gardens when compared to the bright orange display of *C. miniata* and its garden selections. When you start to look more closely, like I have been doing lately, you soon find them here and there. At first I thought that the pendulous-flowered types were representative of *C. x cyrtanthiflora*. Flower colour varied from orange to orange-red. I could not find the "green-tipped flowers" that all the references stated were applicable to *C. nobilis*. Discussion and correspondence always included reference to *C. nobilis*, as if we had this type growing.

Three different types that I have come across so far in gardens, are as follows:-)

- TYPE I. Smaller-growing form producing a clump of foliage approximately 50-60cm high. Leaves are 35 mm wide and the leaf tip is blunt. The small, reddish-orange flowers are curved and do not flare at the mouth. Inner and outer tepals are the same colour. The umbel has approximately 20 pendulous flowers. Stamens are shorter than the corolla.
- TYPE II. A taller growing plant. Foliage is a touch wider, about 40-45mm. Leaf tips are more pointed than Type I, yet blunt leaf tips can be found. Flowers are curved and slightly flared at the mouth. Outer perianth segments are reddish-orange, with the inner ones a pale, creamy apricot.
- TYPE III. Plant is similar to Type II in foliage and growth. The flowers are a clear orange throughout. They are slightly curved and flare at the mouth to 25-30mm diameter. Umbels of 14-20 flowers are held approximately 75cm high. Stamens exerted.

Flower length for all types is about 45-50mm. The buds can have a greenish tinge if closer inspection is made, but this soon gives way to the orange shades when the flower is open. Whilst some buds do have green concentrated at the tip, it does not remain, certainly not enough to give us "green tipped flowers". At this stage I consider Type I as *C. nobilis*, and Type II and Type III as *C. x cyrtanthiflora*. I may learn otherwise.

I am sure there are many more variations on the theme to be found, especially if discussion with local and overseas growers is any indication. The variety of types brought forward by the photographs I have seen show plants differing in flower shape, flower number per umbel and flower colour combinations. Foliage characters vary from rough-edged, leathery leaves ending in blunt tips to the more usual *miniata*-type leaves.

Our Western Australian "nobilis" are said to be "of better type" than the East Coast plants. Larger flowers are produced. One type referred to as *C. nobilis Albany Form*, shows a large head of pendulous, pale apricot flowers. At least that is how I interpret the colour photograph, in my opinion a beautiful clivia. Are these forms hybrid lines that were developed separately to the East Coast types? I always keep my plants

labelled as received, which is handy for future reference, comparison and breeding work. One plant given to me by one of our breeders is a "dwarf nobilis type ex McNeil seed". If I can get it to flower, I will be able to compare it to the other types. Some three-year old seedlings off *C. nobilis* ex South African seed are noticeably different to other types I am growing. I am looking forward to them flowering also.

If anyone could send me some *C. nobilis* wild collected, I would be very pleased. Lets have some more descriptions of the *C. x cyrtanthiflora* being grown. It will help to paint the picture.

Ken Smith
Winmalee

The Clivia in Japan

In Japan as far as Clivia is concerned, efforts at improvement are targetted more towards the leaves than the flower. But my goal is the improvement of the flower itself.

Some of the leaders in this field in Japan tend to name any plant that seems to be even slightly different from the original, as a new variety. Since they are able to sell the seeds under a new name, they fetch a higher price.

But this is causing great confusion since all are hybrids. A novice believes that anything that has been named must essentially be good, and is therefore willing to pay a high price for it. Yet as they gather experience, they become aware that such names do not always carry the same significance as that of a new breed.

This commercial aspect that pursues profit alone is regrettable, particularly to a plant breeder like myself. It is more so because I am of the opinion that even hybrids are valuable in their own right just as long as they are fine specimens.

Yoshikazu Nakamura

I am gratified, in this our fifth newsletter to present such a magnificent array of writers on the subject of Clivia. Yoshikazu has presented us with this little gem of an article to give us an insight into the Japanese way with Clivia. Cynthia Giddy has joined our ranks and donated the ready-printed article enclosed with the newsletter. Ken Smith is his usual prolific self, Bill Morris chips in with his expert knowledge, Cliff Grove a word for W.A., and Kevin Walters gives us the benefit of his experience. Lester Hannibal, the doyen of amaryllid fanciers is here, and Sir Peter Smithers gives us pure "gold". It makes me wonder where we will get such riches for our next newsletter, but perhaps we will have a surprise or two in store.

I will have seed of the more common types for distribution in July. Some of the seed will be heterozygous for yellow, i.e. if one selfs or intercrosses the progeny about twenty-five percent will be yellows. There will be no charge for this seed, but South Africans can send R1.00 for postage and packing, and our overseas friends the equivalent of USA\$2.00.

We urgently need the seed of Clivia caulescens. I will swap three-year old yellows for plants of this species. Does anyone out there hear me? May all your Clivias thrive.

Nick Primich (ed)

Breeding Better Yellows

Firstly what are better yellows?. Well in my opinion they should have the following characteristics:-

1. Shape. The petals should be wide enough to fill in the space between them thus giving a full flower. The flower should be open, not bell shaped and the end of the petals can recurve somewhat thus enhancing the flattish face of the flower.
2. The inflorescence should have sufficient numbers of flowers to form a spherical umbel. The flowers should have room to open properly as individuals but should be close enough or overlap somewhat so as to appear as a solid head.
3. Colour. This obviously will vary, but good deep colour approaching gold is still unknown. Most yellows also fade somewhat as they age, and a good, deep, non-fading yellow would be an achievement. However, light-coloured flowers also should be sought after, with the aim of eventually producing white flowers.
4. Vigour. This applies to the plant itself, and breeding to produce more vigorous plants is most important. If it takes 5-7 years to flower a number of plants of a cross instead of 3-4 years then progress is only half as fast. Hence vigour, as measured by how long it takes a plant to flower is most important.

My yellow strain originated by sibling crosses of the original orange and yellow cross made by Les Hannibal in California. This original F₁ generation (7 siblings) was remarkably uniform and the F₁ yellows obtained from it were fairly narrow-petalled and generally bell shaped rather than wide-open flowers. They were also relatively slow growing (although one flowered in four years from seed) and had narrow (4 - 5 cm wide) leaves.

About ten years ago I decided to repeat the F₁ cross but used as the orange parent a good-shaped flower produced earlier by crossing an European commercial strain with an Australian selected strain of clivia. The yellow parent used was a yellow which has been vegetatively propagated in Australia for many years. It is self sterile but sets seed freely to other pollen. This new F₁ generation has been much more variable than the original, producing some unusual colours and shapes. The plants also have wider leaves and are better growers. Some flowers and umbels are almost perfect and crossed either with one another or with top quality yellows will obviously produce excellent yellows.

When my first F₂ yellows flowered they were pollinated by the Australian yellow which had better shape but still had narrow leaves. Some of these have flowered and are an improvement on the originals. Another yellow strain was produced by Kevin Walters in Toowoomba, Queensland. He obtained pollen from a friends garden from a pale orange clivia which was grown from seed from a Kew Gardens clivia plant, which he used on the self-sterile Australian yellow "*Aurea*". When these flowered some had exceptional flowers, large and full with many flowered umbels. They also had broader leaves and are good growers and propagators. Kevin was good enough to allow me to choose half a dozen offsets from his plants to use on my strain of yellow seedlings. Since using their pollen my seeds have obviously been more vigorous, producing more and broader leaves at an earlier stage. In fact, two-year old seedlings are often the size of 3-4 year old plants of the original seedlings.

The European commercial orange strains produce mainly deep orange flowers in a tight head with many buds. Generally, they do not have the open flowers, and spherical umbels that I admire. The plants also tend to be smaller growing to comply with the space problems for cold-sensitive plants in Europe. They also have very wide leaves. However, they occasionally produce a yellow-flowering plant (about 1 in 1000).

From a batch of twenty-thousand seedlings grown in Sydney, an excellent yellow was obtained from about a dozen yellows that occurred. This yellow has already been crossed with selected yellows off my strain. Further yellows that will hopefully in the near future, be incorporated into this strain include yellows bred from "*Vico Yellow*". This is a top quality yellow raised from *C. x Kewensis*. by Sir Peter Smithers. *C. x Kewensis* is, I believe, simply a select strain of clivia grown (raised?) at Kew Gardens. Sir Peter obtained 2 yellows from a batch of seed, the remainder being orange. "*Vico Yellow*" has been used in Japan to produce other yellows, and hopefully, these will be crossed with the Australian yellows. In general it has been obvious that each time another strain has been added to the original, it has produced an improvement in vigour.

It can no longer be said that the yellows are more difficult to grow than the orange, and the quality of the blooms is also comparable. The aim for the future is to flower plants in which all the described characteristics are present in one plant and I feel sure that some of the unflowered seedlings will do just that. Then the aim will be to intensify the yellow colour and the production (often via the yellows) of new colours like white, flesh, and pink. At present most of my "improved" F₁ plants are being crossed with the very best yellows that are available to me. Although only fifty per cent, roughly, are yellows I feel that these plants will produce more variation both in yellow and non-yellow flowers than in straight yellow x yellow crosses. As some of the "improved" F₁ were very pale, it is hoped that crossed with yellow there may be seedlings which are almost yellow but with just touches of orange. If this occurs, such flowers may appear to be much deeper yellows!

As I said in the beginning, this is my opinion as to what better yellows should be. It would be interesting to hear from others whether they agree or not.

Best of Luck to all!
Bill Morris

Kevin Walters Breeds Clivias

Clivia have always had a special fascination for me. Perhaps not always, as I given my first *Clivia miniata* in my early teens by my paternal grandmother, Charlotte. She had been given two by her son Joseph, my uncle, a locally noted dahlia breeder, and also the grower of a huge collection of shade-loving ornamentals housed in several greenhouses. I still have that original *Clivia miniata*...there should be hundreds, but I have a small clump, having given them away consistently over the intervening years. Toowoomba is a gardening town and noted for its annual spring flower festival, called for better or worse "The Carnival of Flowers". Of great interest is the garden competition run in conjunction with the Carnival. One noted in the 60's the appearance of improved *Clivia miniata* with wider petals than the common *Clivia*. These were called "hybrids". In those days the sort of *Clivia* available in other parts of the world was simply "terra incognita". *Clivia x cyrtanthiflora*, though common, was not valued here as it did not flower in Spring to delight visitors to the Carnival. In those days gardens around town tended to be rather dull for ten months of the year, with all the effort going into producing one great show in spring. Naturally *Clivia miniata* was chosen to colour shady areas.

In 1964 the *Clivia* world opened up for me as I noticed an advert for Belgian hybrid *Clivia* so I sent off \$1.00 for two seeds for that is how they were sold, in batches of two. How I wish now I had ordered more. Not really knowing much about raising *Clivia* from seed, in fact not knowing anything about it, I simply planted the seed in plain soil. Luckily one of the seed didn't bear a grudge about the medium and sprouted and grew. It grew into a lovely *Clivia* with very wide leaves. It took about 10 years to flower. I was quite puzzled as the root-system continued to grow, seemingly out of proportion to the top section, so I had to keep potting on. Well past 10 years I had to wait for an offset to appear. At about the same time the plant

split into 2. Since then it has behaved normally with an averaged-sized root system and off-setting as regularly as any other *Clivia*.

Somewhere in the 70's I obtained by first *Clivia miniata* var. *citrina*. It was the celebrated Australian cultivar "*Aurea*". I used it as the seed parent crossed with the 1964 Belgian hybrid. The cross was made in 1976 and the seed planted in September 1977. I was quite amazed when these hybrids began to flower. Other people were more amazed than I was, saying things like "Isn't that a remarkable *Clivia*!". So I began to take more notice. Eventually I began to think that perhaps there should be exhibition type *Clivia* developed possibly with near-spherical or hemispherical heads, without any overcrowding of the individual florets which should be evenly spaced without noticeable gaps, and held clear of the foliage on a sufficiently robust stem. These large-flowered *Clivia* are much admired here, but I wonder if one day they might be considered passe and minis and spider forms become the rage. I don't think these large-flowered forms are suitable for bedding, unless they have very good protection from the elements.

Kevin Walters

The yellow flowered form of *Clivia miniata* at the Royal Botanic Gardens, Kew and clones "Vico Yellow" and "Vico Gold".

The following information about "*Clivia miniata* Regel var. *flava* Phillips var. nov.; a forma typica floribus flavis differt. (National Herbarium Pretoria, No. 8724)" appears in " Flowering Plants of South Africa", 11 (1931) together with a full page plate (No. 411) illustrating the plant.

" On Plate 13 we illustrated typical *Clivia miniata* as found in Natal. The illustration on the accompanying plate represents a variety, also found in Natal, which differs from the species in having yellow flowers. We received the specimen from Mr. B. Nicholson, D.S.O., of Mbabane, Swaziland who obtained the plant from Mr. C.R. Saunders of Melmoth, Zululand. Mr. Saunders informs us that one or two plants were found in the Eshowe Forest, Zululand, about the year 1888, and a number of plants have been propagated from these originals. Plants were propagated from seed but took many years before they flowered. Mr. Saunders also informed us that two or three years ago a plant flowered at the Royal Botanic Gardens, Kew, but as far as we are aware has not been figured. The fact that all plants raised from seed have yellow flowers indicates that we are dealing with a pure strain; but except for the colour of the flowers we have not been able to detect any tangible characteristics which would separate it from *C. miniata* and have therefore kept it as a yellow variety."

There then follows the formal description of *Clivia miniata* var *flava*. Unfortunately my photocopy of the text ends with the description of the style, but I presume that it goes on to state that the seed capsules of the plant are bright yellow. This seems to me to be an important point differentiating it from the type, which is not mentioned in the description above, perhaps because the author (Pole-Evans?) was working from herbarium material.

The origin of the yellow-flowered plants mentioned in the description above as flowering at Kew, Apparently in the period 1920-30, is not clear from this text, but it may have been the intention to imply that they were of similar origin to Mr. Saunders plants, and this seems to be confirmed by what follows.

The story is taken up in a letter from the late Mr. Lewis Palmer, Treasurer of the Royal Horticultural Society, whom I knew well. The letter was dated the third of January, 1964, and addressed to Mr. Marais at Kew:-

"When I visited him (Sir Charles Saunders, Administrator of Zululand) in October 1925 at his home in Eshowe he had several large tubs of it (the yellow *Clivia*) in flower on his stoep. He kindly gave me two plants which I brought back to England and gave to my father-in-law, the late Lord Wakehurst. He

gave one to Kew and kept the other. After consulting Sir Arthur Hill, Lord Wakehurst decided the proper name for the plant was *Clivia citrina* or *Clivia miniata* var. *citrina*. Both plants flowered and Lord Wakehurst exhibited his at a R.H.S. meeting in 1927 or 1928 under one or other of those names. Both plants set seed and subsequently died."(My underlining)

Mr. Palmer continued:

"The seedlings in both cases reverted to the orange colours of *Clivia miniata*, but in both cases *C. miniata* had been present in the same greenhouse and in flower. This induced the late Mr. Raffel of Kew to endeavour to segregate back to the lemon colour by selfing the seedlings and selecting. I know that shortly before he died he had been successful and for some reason called the plant *C. miniata* var. *flava*. Whether it was the F₁, F₂, or F₃ generation I don't know. In the meantime I visited South Africa again in 1948 and was able to obtain another plant from a friend of Lady Saunders, who had a stock in her garden. This flowered in my greenhouse and I selfed it without any other *Clivia* being present and the resulting seedlings have come true to colour..."

From the forgoing material it is possible to make certain deductions as to the origin of the plant received by me in November 1970 from Mr. Russell as *Clivia kewensis* Cream.

- 1- The yellow-flowered Kew plant is not the original *Clivia miniata* var. *flava* received from South Africa, which died. It is a segregation back to that plant from a hybrid with a typical *C. miniata*.
- 2- Question:-What then is the correct name of this plant? Presumably Mr. Raffil used the name "*kewensis*" because in fact the plant was segregated and produced at Kew?
3. Question:-What is the status of the plants grown and distributed in South Africa under the name of *Clivia miniata* var. *citrina*, a name which Lord Wakehurst and Sir Arthur Hill used previously to the publication of *C. miniata* var. *flava* in 1931 and quoted above?
4. My plant of *C. kewensis* Cream flowered and produced seed in bright yellow capsules. It subsequently died but its pollen was used on orange forms received under the names *C. kewensis* "A" and *C. kewensis* "B". I assume that these were also seedlings from Mr. Raffil's program which did not produce selfed yellow flowers, but which nevertheless carried genes from the original *C. miniata* var. *flava*. The products of this cross in my greenhouse produced numerous variants on typical *C. miniata* with differing degrees of yellow in the throat of the flower and varying shades of orange, but none of them produced yellow seed capsules and there were no selfed yellow flowers until many years later. It was then that from a large quantity of surplus seed scattered under the staging in the greenhouse there finally appears, four years apart, two yellow-flowered plants with bright yellow seed capsules. These separate clones have been named "*Vico Yellow*" and "*Vico Gold*". These plants presumably have genes from the Raffill yellow plant on both sides of the cross.

Peter Smithers
5 December 1992

This paper is based upon material kindly supplied by Mr J.L.S. Keesing, Living Collections, Royal Botanic Gardens, Kew. Corrections and criticisms of my interpretation of the material will be welcome.

An Old War-Horse Comes to Light

Dear Friends

Someone sent me your vol. 1(3) 1992 issue of the bulletin. Wasn't aware of the activity. As some know I've been mixed up with Amaryllidaceae culture for some 50 years, and as secretary of the old American Amaryllis Society back in 1943-45, became acquainted with many of the old amaryllis gang. A good number are now fussing with bulbs up yonder. It was a pleasure to know them all.

You asked about early publications on Clivia. Well, there was the Gladys Blackbeard article in the 1939 *Herbertia*, pages 190-93, where she mentions *Clivia miniata var flava* which was corrected later to *var citrina Watson*. When her estate was purchased for a native reserve, Gordon McNeil obtained some of her stock and sent me a start of her *var. citrina*. The plant has always been a struggle to grow. It was several years before it flowered and then was self-sterile. But I had used its pollen on several unnamed garden forms as well as the hybrid cyrtanthiflora. The resulting seedlings were light orange, and in an inspiration backcrossed these each way with the Blackbeard clone. Mendel's views on hybridization held true. About half of the backcross seed turned out yellow, but most instances the petals were not as broad as desired.

Then in trading about I picked up a couple of light amber-yellow seedlings, so more crossing occurred. Offsets and seed were turned over to a friend down along the coast who had better soil, climate, and growing space than I have here. It was a good thing too, as the worst freeze in 110 years hit during the winter of 89-90 with temperatures below minus 10 C for a week. That froze many of my bulbs, even under plastic tarps. But much to my surprise much of the seed started sprouting so I passed it about to several friends and interested Clivia fans. However, the main interest appears to be in the broad petalled Kew form of *Citrina*.

On several occasions I've had enquiries if one could use tissue culture in propagating Clivia. Yes, but why go to the trouble when one can simply notch the roots where they attach to the main trunk. One makes an inverted V-notch leaving a bit of green trunk tissue at the peak of the notch, and the cut may not be more than 2 mm. deep. Tissue sport plants may not need to be detached for several years, and the number produced depends upon the number of roots which you notch. Better growth is obtained in open mulched beds where the Clivia roots can grow out horizontally for several feet. Occasionally, notching 15-20 cm. out from the trunk will initiate tissue sports if the root in that area is exposed to light.

One can produce some bud sport plants by notching the roots of a potted Clivia, but it definitely is not as successful as in a bed where the roots can run out horizontally under the surface litter where they are at peak vigour. Gordon told me that in the wild some Clivia grow in the moss where it covers trees and rocks, so moss culture sounds as a good method of growing seedlings. I've used it for *Hippeastrum*.

Oh, Yes. Where is Fair Oaks?

Its 25 KM east of Sacramento in Central California.

Sincerely
Les Hannibal

Dear Friends of Clivia,

It was with some interest I read your PR release in our W.A. Glad, Dahlia and *Hippeastrum* journal and my friend Les Larson of Palmyra said F of C was up and running. Had to wait though, until I moved locale - from gravel and frost to sand plain - how I'm looking forward to growing Clivia in the ground. In the gravel they just sulked.

Beginner will best describe me, though I've grown the *C.nobilis* and *C. miniata* as tub plants for years - the pale colours of special interest - so far I know of no one in Australia with cream, white or variegated foliage types, so if there's anyone willing to sell divisions, I'm willing to import. The Agriculture and Quarantine personnel are a marvellous lot to deal with here.

To date the biggest pleasure was watching *C.lutea* bloom, hopefully the seedling from the aforementioned friend , will prove to be the scented *C.lutea*.

Looking forward to your newsletters and MERRY XMAS

Regards
Ruith Hoskins

Dear Sir or Madam,

I am interested in joining the Clivia Club. I am a member of the IBS and IBSA, as well as the BSA, but I grow bulbs only as a hobby.

I currently have several yellow clivia specimens, but am more interested in *C.gardenii* and *C. caulescens*. Would you know of a source for these?

Please send me information regarding the club. Thank you for your time.

Sincerely,
David S. Casebier.

Dear Chairperson
Clivia Club

I wish to take this opportunity to thank you for your efforts and diligence over the past year of which we have all reaped the benefits.

The brochures we received from the Clivia Breeding Plantation were most inspirational, and hopefully we can see some of the better colour forms and variegated plants emerging in our own collections in the not too distant future.

I am particularly interested in the variegations and would like to know where I might be able to obtain such a plant locally. Please find enclosed a cheque for the annual subscription 1993.

Thank you
Yours sincerely
A. J. Hankey

Dear Editor

News about Clivias. Most if not all the seed I got from you have germinated. My white Clivia's seed has also sprouted - as did the one I gave you. It will be interesting to see their blooms. Who knows, with a little bit of luck there may be white amongst them. I have quite a few seeds on the yellows, but of course, grass green.

Since joining the Clivia Club I am giving my plants V.I.P. treatment, more attention than in the past. I have transplanted the white one into more fertile soil than what it was planted in as I am adamant to force it into bloom this next season. I bought it with an existing flower stalk on, and therefore expected it to have bloomed this past season. When I took it out of its container, I noticed that the soil was like red mud, no compost material in it at all. I cleaned the roots and repotted it in good potting soil and will now keep my fingers crossed.

The Clivia I had that you noticed had a rough underleaf growth was sprayed with Benlate, and all new growth is now free from this disease. This plant is also being nursed to ensure it will bloom next flowering season.

One of my neighbours, a close friend of mine, planted her clivia in the open garden next to a glasshouse together with some white arums. This must have been some five or six years ago. This plant has increased in size and every year she removes the plantlets that appear out of border line. I got one during 1991 and behold it bloomed in 1992. She calls this "thinning out." For the past two years she has remarked on the blooms obtained from her existing plants. More than two dozen stalks of the bright orange flower. To see the plants one would imagine the frost would affect them, and although she does not cover them in the winter, they bloom year after year.

She has never allowed the seeds to mature, she cuts the stems off the plants once the flowers are dead. I have never noticed the yellow rust marks on any of her plants leaves. She also does a lot of flower arranging, and the stalks are removed from the plants while still young and fresh. This method is so different to others like myself, who don't want to cut the flowers off because firstly they make a lovely display in the pots, and secondly, everyone wants a few seeds. It appears that by not removing the flower stalks I am preventing my plants from growing as they could have, had they not had to give nourishment to the seeds that I want. In newsletter No.3 of November 1992, you published a letter from L. van Heerden, in which the writer states that a *Clivia miniata* was planted some ten years ago, and has since multiplied to some two thousand plants. The writer says they make a sight when they are all in bloom. With all my Clivia experience over the last twenty years, I cannot see how one plant could have increased to two thousand plants in ten years.

My original clivias have increased by about a dozen plants in this time, and my yellow plant, by about ten. The seeds never matured until this year when you showed me how to cross-pollinate. There are now four stalks with seeds on them, and it remains to be seen if they will be yellow.

regards
Celia van Vuuren.

We are glad to hear your clivias are thriving now. Lets hope that they start to show growth to rival those of Laila van Heerden. Clivias will grow faster in the open ground than in a pot all other factors being equal. They are capable of producing a profusion of roots which has to be seen to be believed. It is obvious that Celia van Vuuren's friend is growing her plants under ideal conditions, but so too I think is Laila van Heerden.

Perhaps Mrs. van Vuuren has overlooked the geometrical procession of numbers when one uses seed. One plant, one flower stem, how many seeds? I think, as I use hand-pollination, I average well over one hundred seeds per stem. Let us allow twenty-five for the first year. The second year sees one mature plant and twenty-five one-year seedlings. The third year sees the mature plant have two flower-stems, with a total of seventy seeds, twenty-five one-year seedlings and twenty-five two-year seedlings. The fourth year gives us twenty-five three-year seedlings, twenty-five two-year seedlings, seventy one-year

seedlings, and one hundred seeds from three flower stems. Going on like this, without any myths or magic, the sixth year sees thirty flowering sized plants, twenty-five four-year seedlings, seventy three-year seedlings, one hundred two-year seedlings, one hundred one-year seedlings, and some seven hundred and fifty seeds. The seventh year gives sixty mature plants(a few offsets by now), seventy four-year seedlings, one hundred three-year seedlings, one hundred two-year seedlings, and seven hundred and fifty one-year seedlings. Seed, about one thousand five hundred. The eighth year sees one hundred and forty mature plants, the ninth year two hundred and eighty, the tenth year gives four hundred mature, with seven hundred and fifty four-year seedlings, one thousand, five hundred three-year seedlings followed by any amount of seedlings and seed that one could handle. (Ed.)

Getting the Most out of Your Clivia

To get the most enjoyment out of growing your clivia, you must try hybridising for new colours and new flower and foliage forms. Because of the delay between seed set and getting a flowering result, you must start now! After that initial gap of three to four years you will have the never-ending joy of seeing what your offspring has turned out to be. To get started all you need is a small water-colour brush as used in children's paint sets. Our local supermarket sells a pack of five for about \$1.50. If the plant to be hand pollinated is in a glass-house or can be moved indoors I do not consider it necessary to remove the pollen of the mother plant. I simply dab the brush on the pollen of the donor plant, and then dab it on the stigma of the mother plant.

I do this over several days to make sure that the pollen has taken. Make sure that you then put a tag on the pot indicating what the cross was. I can assure you that you will not remember what the cross was in a year's time when the seed is ripe.

With your better plants it is also wise to collect and freeze some pollen so that you can make crosses with plants that flower at different times of the year. To do this I still just use the paint brush to brush off the pollen into a small glass phial. If you are friendly with your chemist, the type that they dispense small tablets in is ideal. Write on a piece of masking tape what the pollen is, date it and put it in the deep-freeze section of the fridge. It will last for at least twelve months, and I have used some at eighteen months and still found it viable.

If you are really venturesome you might try crossing with some other member of the Amaryllid family. There are reports of such crosses, but seldom if ever do we seem to see proven results. Good Luck! Give it a go.

Cliff Grove

List of members

Connie Abel, 89 Brampton Road, Lynwood Manor, 0081
Mrs. W.E. Allison, 10 Vestness Road, Valhalla, 0185. General.
C. Barker, P.O.Box 154, Knysna, 6570. Growing & selling. Looking for yellows.
Denise Currie, 303 Cromwell Road, Lombardy East, 2090. General.
E T Davies, P O Box 92, St Francis Bay, 6312.
M. de Bruyn, Bel Monte 43, Maianalaan, Brummeria, 0184.
Mr. A. Gibello, P.O.Box 253, Great Brak River, 6503. General.
Mrs. Cynthia Giddy, Giddy's Nursery, P.O.Box 45, Umlaas Road, 3730.
Mrs. N.E. Gilson, P.O.Box 6, Swartberg, 4710. General.
A.J. Hankey 7 Orion St., Kensington, 2094. General.
Mrs. C. Howie, 7 Ripple Close, Newlands, 7700. General, buyer of yellows.

J. L. Holmes,P.O.Box 4063, Idas Valley,7609.General.
Engelina Joubert,P.O.Box 16, Settlers,0430. General.
Penny Lennox, 2 Ascot road, Milnerton, 7441. General.
Mrs. Sumia Lombard, 349 Elizabeth Grove,Lynwood,0081.Gen.
Mrs. M.L.A. Lubke,Waterloo Farm,P.O. Box 83, Grahamstown, 6140. Gen.
Mr. M.D. Mey, 55 Black St., Parkdene,1460. General.
Lukas Otto,P.O.Box 309, Muldersdrif, 1734
Mrs. P.Quin,Winterglen,P.O.Box 948, Hilton,3245.
Mrs. L. Robertson, 59 Harewood Drive, Nahoon, 5241. General.
P.E. Shanahan, 27 Pat Newson Road, Epworth,Pmb.3201. General.
Mr. A.V.V.R. Schweizer, 14B Pioneer Rd., Irene, 1675. General
Mev. A. Theron, Tarentaalstraat 5, Brits,0250.
Ms. D. van der Merwe, P.O.Box 651006, Benmore, 2010. General.
Willem H.J. van Deventer, Pirokseenstraat 672, Elarduspark X6, 0181. Pretoria. General.
Laila van Heerden, P.O.Box 15766, Lynn East. 0039.
P. von Stein,3, The Bend, Edgemead,7441.
Laila van Heerden, P O Box 15766, Lynn East,0039
Mrs. C. van Vuuren,P.O.Box 6292, Homestead,1401.
P.Vorster, Botany Department, University of Stellenbosch, Private Bag X5018, Stellenbosch,7599. Hybrids & Cultivars.
Mr. G. J. Wiese, 12 van der Westhuizen Ave, Durbanville, 7550

Australia

Milton Edwards, P.O. Box 499, Belgrave , Victoria 3160.General.
C.J. Grove, 39 Pandora Drive, City Beach, 6015, Western Australia. Breeder
Ruith Hoskins,6 Tomlinson Place, Armadale,Western Australia,6112.Gen.
Les Larsson, 31 Solomon Street, Palmyra, 6157. Western Australia. General.
Ron May,11 Loch Street,Toowoomba,Queensland,4350.Breeder, fancier.
W. Morris, 37 Brocklesby Road, Medowie, NSW.2301 Breeder.
John Roper,11 Kianga Street, Graceville, Queensland. 4075.
Ken Smith, 593 Hawkesbury Road, Winmalee, NSW.2777. Breeder.
Kevin Walters, 20 Wyalla Street, Toowoomba, Queensland.4350

Japan

Yoshikazu Nakamura. Clivia Breeding Plantation, 4-28, Kurodo Mobara-city, 297 Chiba Prefecture. Japan.Breeder.

New Zealand

David J Brundell, P O Box 8,Waiuku,New Zealand. General.

Sweden

Borje Svensson (Mr.) Studentstaden 4, S-75233, Uppsala. General.

Switzerland

Sir Peter Smithers, 6921-Vico Morcote, Switzerland.

United Kingdom

C.M.Atkinson,7 Leafy Way,Locking, Weston Super Mare,Avon BS24 8BD United Kingdom. General.
Mr. Ian Coates,Linden, Hall Lane, Mobberley,Cheshire,WA16 7AE.

USA

D.S.Casebier,Brown University,Box H,Providence,R I 02912, General.
Dr. R.L. Douth, 1781 Glen Oaks Drive, Santa Barbara, California 93108
Lester Hannibal,4008 Villa Ct,Fair Oaks,California 95628.

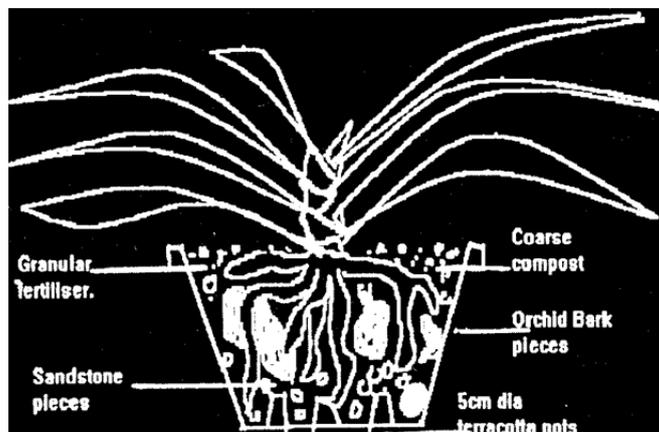
On The Compost Heap

Well there we are now, running a lot lighter, but the material is more solid now. Fancy all the senior Clivia fanciers coming out of the closet and holding forth. I bet they have put a few of my family away in their time. You do realise that a yellow clivia is far more tasty than the orange! One must also be careful of these frightful chemicals that abound these days.



Lily Borer.

Clivia on the Rocks



Isn't it frustrating when a choice clivia plant you are trying to establish keeps rotting at the base! One way to ensure excellent drainage is to pot up the plant in rocks. Good size lumps of sandstone, about 5 or 6 cm in diameter will suffice. Perhaps large pieces of terracotta pot or broken brick could be used, or all three mixed together.

An example that I did was potting up a plant into a 20cm black plastic squat pot. Three small terracotta pots (5cm) were placed upside down in the plastic pot. The roots were spread around the pot and the lumps of rock placed as evenly as possible to almost fill up the pot. A handful of orchid bark was sprinkled in as the rocks were being put into place. The top of the pot was then covered with two or three handfuls of coarse compost. Mainly the leaves and twigs from the top of the heap, not the well decomposed material. This was to aid some moisture retention. Lastly, a sprinkle of granular fertiliser was placed on top of the compost. Watering was done and there you have it. No way the water sits in this pot.

Ken Smith
Australia.
