

Clivia Club

P.O. Box 6240 Westgate 1734 RSA

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AN INTRODUCTION TO CLIVIA

Because of the diverse nature of the subject matter being discussed at this conference and the varied interests of the participants, I feel sure there are some who have never heard of Clivia or know the charm and beauty of this easy to grow plant.

First discovered in South Africa in the early 1850's it was sent to England where it was reputed to have first flowered in the conservatory of the Duchess of Northumberland (Lady Clive) thus it was given the name Clivia.

In all there are four named species:- *Miniata*, *nobilis*, *gardenii*, and *caulescens*. The most beautiful and easily identified is *miniata* which has trumpet-shaped flowers, whereas the other three have narrow, tubular, pendulous flowers. *Miniata* being Latin for red, would indicate that the first-discovered and natural form of the species was coloured red. This seems quite strange to us here in Australia as a red-coloured Clivia is quite rare, most varying from a light to mid-orange with a yellow centre, this, presumably, being a cross between the original form and a naturally occurring sport called *aurea* or *citrina* to the purist. I believe it should be called *citrina* but the name most generally accepted in Australia is *aurea*. There are other names in various other publications which further cloud the issue such as *kewensis*, *sulphurea* and *flava*.

A general description of *miniata* would be "having long, narrow, smooth edged, strap-like leaves of 20-24" with pointed ends. Bright orange, trumpet shaped flowers with a yellow centre borne in umbels of 15 to 20 on a flat stem of 18-24". The plant normally flowers here from September to November but may send up the odd flower at almost any time of the year. The seeds, when first set, are dark green but turn to a bright red on maturity, which can take up to 12 months. *Miniata* has been subject to an extensive and intensive breeding programme which has resulted in many new hybrids, generally with much broader leaves, larger and more symmetrical flower heads and colours ranging from pale cream to almost a burgundy. There does not, however, appear to be any progress on a complete break away from this colour range at present

The second of the varieties, *nobilis*, which has an umbel of 20-50 small, tubular pendulous flowers of orange-yellow colour with or without a green tip. The leaves are deep green, strap-like of one and a half to two inches that are rough to the touch. The flowering period is similar to *miniata* and the seed set similarly although the capsule of *nobilis* is generally smaller and rounder.

The third species is *C. gardenii*, which was first discovered in 1855 and named after a Major Garden. The flowers are pendulous, slightly curved of salmon colour with a green tip which turns yellow with age. The umbel usually consist of 10 - 14 flowers on a 20 - 24" stem. The leaves are long, green, strip like of one and a half to two inches width, tapering to the extremity with a blunt point.

The fourth species is *C. caulescens* which was named in 1943. Like the previous two, it is of pendulous form with the number of flowers per umbel between the two. The most distinguishing feature of this species is

that, with age, the outer leaves fall off and leave a central stem that, on mature plants, can eventually grow to approximately 18 inches. I have yet to see this plant as it is generally unavailable in Australia.

The first recognised hybrid to be grown from these species was in 1904, a cross between *miniata* and *nobilis* called *cyrtanthiflora*. It is also of pendulous form but, as might be expected the mouth of the flower is wider than *nobilis*, being approximately one to one and a half inches in diameter.

In preparing to write this paper, I read many articles but the statement that really caught my attention was "the distinction between the three pendulous species as not great and that intermediates may exist". Here in Western Australia I find it extremely difficult to find and identify any species and think that most are intermediates rather than species.

For example, *nobilis*, according to most descriptions, should have a green tipped flower, although I have recently read where they may exist in plain colours. I find that most I consider to be *nobilis* are a plain colour. Another feature is long strap-like leaves with rough edges and rounder ends. I have plants with long, narrow leaves with pointed ends and no serration. Others have short, thickish leaves with rough edges and rounded ends. In all, I have almost every form of leaf with pendulous flowers varying in colour from light orange to quite dark with the width of the mouth from narrow up to the size of *cyrtanthiflora*.

If one follows the general description of *gardenii* then I have such a plant. It flowers in May-June as it should, but it also has a few other attractive features. The stem of the scape when it first appears and right through the flowering period is a light, brownish colour and only turns green when the seeds are setting. The seeds when first set are the usual green but turn to a most attractive cherry pink when ripe rather than red. Is this *gardenii*, a sport or something new? Mrs Les Larsson, during her recent visit to America, was unable to get an answer and this is the quandary in which I find myself with many of my plants. It would certainly be nice to have a colour pictorial catalogue. Perhaps we could start one.

Cultivation of *Clivia* in Perth is not difficult. They will grow in the garden provided they are given adequate shade. They make most attractive pot specimens for the verandah or sheltered patio. Potting mixes are generally rich in humus as would be in their natural habitat of growing under trees. The suggestion that the mix be quite heavy with loam I find inappropriate in this climate.

During a normal Perth summer, we get an average of 60 days over 30°) with a lot closer to 40°) and several over. During this period we also get hot, dry easterly winds which will burn the leaves and flowers if not adequately watered and shaded. However, during our short, wet winter we get the extreme with many nights dropping to below 10° with very heavy rain. Under these conditions, think that a very heavy mix would run the risk of root rot. I prefer a compost mixed with sand, of which we have plenty, and additive of bone meal to help tide the plants over during the long periods between repotting as they prefer to be left undisturbed and crowded for several years. During the hot weather, which is also the growing period, I like to give a liquid fertilizer once a month on mature plants and twice a month on seedlings. I rest the plants during autumn by reducing watering and stop fertilizing. Once the scapes appear in spring or early summer, I again start fertilizing.

Pests and diseases are few, the main trouble being caused by mealy bugs forming well down inside the axils and not always evident until some damage is done. To counter this pest, I use a systemic spray in a one litre trigger-operated sprayer. I adjust the nozzle so that it squirts like a water pistol and I just shoot a stream of spray at the base of the leaves of each plant. This saves spraying the whole plant and negates the need to cover up with masks, etc. as there is no fine airborne spray to drift and be inhaled. I realise this is not

practical on a large scale but it is surprising how quickly you can cover quite a number of plants and it is effective.

The easiest method of propagation is by division of well established clumps. My first Clivia was given to me by an elderly gentleman who just snapped off a piece at ground level with no roots at all and it grew. Not that I would recommend this method but it does give an indication as to how hardy these plants are.

The second method is to grow from seed and, whilst this is a very slow process taking up to 5 years to get a flowering plant, it is certainly the most rewarding. Once you get past the first 5 years, provided you plant seed each year, you will have a continuity of new flowering plants. From flowering, it takes nearly 12 months for seed to ripen. By this time it is a bright red, except aurea (citrina) which is a green-yellow colour and my gardenii, pink. At this stage, if the seed is ripe, a slight twist and the seed will break from the stem.. The fleshy exterior is removed and a whitish pea sized seed is revealed in anything from a single up to six seeds per pod. To sow these I get a seed tray of my normal potting mix and push in the seed until it is 50% submerged in the mix. Roots appear very quickly but the foliage seems to be quite erratic with some appearing after a few weeks whilst other take months. No doubt bottom heat and glasshouse conditions would speed all these processes but mine usually germinate quite well just in shady locations in the garden.

Cross-pollination and hybridization of Clivia is an area hardly touched in comparison with other plants, although there are early recordings of named hybrids such as atrosanguinea, aurantiacam cryebta, cooperi, grandiflora, lindenii, splendens and sulphurea. Most of these names seem to have disappeared altogether although, I guess, many are today among the plants I query.

There are recordings of crosses between such plants as C. miniata and Eucharis grandiflora, such a cross supposedly being responsible for the perfume of some plants. Whilst some are perfumed, many people doubt the possibility of such a cross. There are other reported crossings, such as with Agapanthus and Narcissus, but when one tries to track them down, it usually ends up the same story "I've heard about it, I've seen it somewhere but nobody can obtain it."

When one compares what has been done with Hippeastrums from such humble beginnings, think of what can be achieved with Clivia when we have such a beautiful plant to start with.

Let's get started, but please, let's get the names right first.

Cliff Grove

(from a paper read to the "World Conference of Gladioli and Hippeastrum at Perth in September 1988)

Variegation in Clivia

As a horticulturist I have an interest in plant mutations, particularly variegation. The more I learn about variegation the more intrigued I become. When I started my research on the genus Clivia I knew there would be variegation in some plants but I didn't realise the diversity of foliage variegation that I would discover.

The irregularly striped form of Clivia miniata is the most common type encountered. Every so often a variegated seedling will crop up in a batch of seedlings, particularly the hybrid types. The well established Japanese strain shows variation in the leaf stripe pattern. The new leaves can increase or decrease in amount of variegation. Sometimes completely yellow leaves will develop, with or without leaf distortion. Any new

shoots from the base of the plant will show the dominant colour of the foliage from that side of the plant, i.e all green, striped or completely yellow. I have found the yellow portions easily damaged by sun scorch or fungus.

One of the most striking variegations is the form with bold yellow margins. An article in a RHS Journal outlined the development of a cultivar called 'Demeteria'. The plant, which was a chance seedling mutation in a batch grown by Demeter Nurseries of Belgium, was displayed for the first time at the Ghent Floralties in 1905. A similar type grown in Japan is called 'Fukurin' and is probably the same mutation.

A fine foliage Clivia that I grow is a form of our "common" *C.miniata* that has a centre stripe/stripes of gold. The gold colour is reduced to a paler lime-green in too much shade. The trick is to grow it in a bright enough area to colour the leaves without causing leaf burn. I have pollinated this form with several other Clivia types and the fruit produced shows some striping also. This is said to indicate the potential variegation of the seedlings from seeds in that berry. No form of variegation has appeared in seedlings from these crosses, but further breeding may prove interesting. The irregularly striped forms may be reproduced by seed, even if crossed with normal leaf plants. A range of seedlings will result, from plain green through various stripes to all yellow seedlings that are weak growers. Subtle green on green variegation has the potential to produce better variegated plants in subsequent generations. Look for the striping on the berries and see what results you get. The margin variegation is harder (impossible?) to continue through seedling production. Vegetative propagation is a sure way to perpetrate this very desirable form. Although I note that the RHS Journal article claimed that self pollinating the cultivar 'Demeter' produced a large percentage of variegated seedlings, with only one or two seedlings approaching the beauty of the parent plant. I have grown a batch of seedlings from self pollinated flowers on an irregularly striped form and all the seedlings turned out lime green. I don't expect them to survive.

An unusual and rare variegation is a Japanese form where the base of the leaf is creamy yellow and the leaf tip is normal green. Each colour about half and half, which reproduces true on each new leaf. A seedling is a batch of hybrids that I grew had a seed leaf that emerged gold and subsequently aged to green. Each new leaf behaves in the same way. As it is only a seedling, I don't know how it will act in a breeding line yet.

It appears that the variegated leaf character can be found in various forms on plants of the broad leaved, tall growing hybrids, through the typical leaf common type to dwarf plants grown for potted, flowering plants. In a large batch of seedlings of the cultivar 'twins', a group of variegated seedlings have been isolated to develop that character. Most of the variegation in Clivia is a creamy yellow to deep yellow colour. Pure white variegation is rarely produced. *C.miniata* has produced the forms grown today. I have been told about a white variegated *C.nobilis* in Western Australia that was unfortunately lost to disease. I wonder if anybody has been fortunate enough to find a variegated *C.caulescens*, *C.gardenii*, *C.nobilis* or *C.x cyrtanthiflora*?

It just goes to show how interesting and diverse leaf characters can be. We can add the variety found in flowers to the foliage variegation and produce some unusual combinations. And if we leave the foliage plain green, there are variegated flowers waiting to be developed. So keep your eyes open for any differences in both foliage and petal coloration.

Ken Smith

Dear Editor,

Thank you for a most interesting first issue of your newsletter. A few queries:-

- (1) The Post Office is unable to supply the telephone number or the address of von Lyncker Nursery in the Cape (page 6 of the newsletter). This nursery apparently has yellow clivias in limited supply at R300.00 each.

- (2) Please can we have basic hints about growing the various clivias, and sowing the seeds.
- (3) Is it not possible to have yellow clivias propagated through tissue culture

Yours sincerely,
Mrs. C. Howie.

Dear Mrs. Howie,

You are to be congratulated. As the first of our "registered" members to write in with a query or three!

- (1) Von Lyncker has returned to Germany, but Waldo van Essen has incorporated this business into his Sunburst Flower Bulbs cc. You could contact him at P.O. Box 183, Howard Place, 7450. The phone number is (021) 54 - 4994.
- (2) I will give you a short indication as to how I raise my plants and germinate my seed, and I hope all of you out there who differ will write in and tell us about it.

I have found that clivias will survive, if not thrive in almost any growing media. I grow most of my plants in pots and I prefer the following mixture. One part washed river sand, one part peatmoss (the South African variety), and one part mature compost. I trust the clivias will concur. Jim Holmes grows his in oak leaf compost, and his plants are big and strong. I keep some of my select plants in the glasshouse, some under shade cloth, and some in shady situations under trees. They will not tolerate strong sunlight for very long, neither will they take much frost without losing their leaves. I feed them weekly with a commercial mixture designed for foliar feeding, and mixed to the maker's instructions plus a little Savlon added to the water as a "sticker".

In the spring months I give every fourth week instead of this mixture, one of 7.3.1. mixed in the same manner. I keep them fairly moist, but not too wet, and during June, July and August I hardly water them at all. When the flower stems have cleared the foliage I resume watering again.

When the fruits have changed colour and become pulpy they are ripe and the seed can readily be extracted and cleaned. I have found by experiment that the best conditions for germination are warmth, moisture, and darkness. I get this by placing the seed on top of a crumbly mixture in a small container in the glasshouse and covering it with a light-proof cover. I control the moisture by hand watering, and continually examine the seedlings for fungal attacks. Minor fungal growths are easily rubbed off by hand, but anything persistent or of major proportions is better dealt with by a commercial mixture. Clivia enjoy being crowded in a pot, and one does not need to repot too rapidly.

You would be surprised how much root can form in small little pots. However, don't overdo it. It can be tedious untangling roots when you finally are forced to transplant. You can press the seed into the soil if you find that the root tends to lift the plant instead of penetrating the soil.

- (3) I have personally heard from Kirstenbosch, Roodeplaats, and a local firm at Midrand that tissue culture was not yet successful with clivia. Ken Smith, in his erudite thesis on clivia did mention a Chinese source that was reputed to have some success, but was unable to follow up on it. Do any of our readers have any information on this subject?

Editor

Dear Fellow Gardeners

Your letter "Friends of Clivia" was passed on to us by Les Larsson of Perth, W.A., who must be the best known grower in W.A.. Several members of our society grow clivias though none of us are experts. As we are all keen gardeners and always looking to learn more we would very much appreciate any information you can send us.

Good luck with your aims to spread the word,
Yours sincerely,

Bella Swainston
Hon. Sec. Albany Horticultural Soc., P.O. Box 1495, Albany, 6330 W.A. Australia

Dear Mrs. Amos,
I would like to join the Clivia Club and to receive information as to what is going on.

A good many years ago I crossed C. Kewensis with C. Kewensis Cream and this finally produced one exceptionally good yellow seedling, now being used by Mr. Nakayama (Nakamura?) for breeding under the name of Vico Yellow. It has been followed by a second yellow seedling which might be slightly better, and if it is it will be named Vico Gold. Both will be registered with the registrar of Amaryllids at the University of California at Irvine.

I have written to the Registrar about the registration of Clivia clones and will let you know what the answer is in case you are not in touch.

With best wishes,
Peter Smithers

Dear Friends,

I hope more of you are going to write in and give us your queries, voice your opinions and tell us of your experiences in the world of clivia.

Do not be afraid if you are inexperienced or unfamiliar with botanical terminology. This newsletter is for clivia people. I am no expert. I have only been growing clivia for some ten years, and only in earnest for the last five years. I have a lot to learn, but one must have the courage of one's convictions and experiment with a view to improvement for the future. It is also important to recognise and rectify one's mistakes. What better way to learn than to gather from people all over the world who have the interest of clivia at heart.

The letter from Sir Peter is just the sort of letter we need. Valuable information can be gathered and stored in a readily accessible place for those who will come later and need this knowledge for future breeding. I would be grateful if Sir Peter could extend his kindness and expound further upon the theme that he has broached. Perhaps he could indicate some of the trials and tribulations that beset his early breeding experiments.

I hope that you get in touch with each other and make useful contacts. Sometimes I have found that my friends have taught me more in a minute than what I have found out in years of battling.

We have the promise of lots of interesting articles for our coming issues. If you will let me know what you

want, and the type of feature you are looking for, I will see what I can do to satisfy you. We are attempting to sort out the Gordon Mcneil questions. We should have some news for you shortly.

As a matter of interest, I had a *Eucharis amazonica* in flower, and an early *Clivia miniata*. The *C. miniata* had two flower stems, the first of which I self-pollinated, and the second of which I crossed with the *E. amazonica*. The *Eucharis* lily had three spathes, the first of which I self-pollinated, and the second and third were crossed with the *Clivia*.

In both cases the first flower stems did not set seed and withered, indicating that both plants were self-sterile. The second stem of the *Clivia* has set seed, as have both the remaining stems of the *Eucharis*. Now, as all lovers of the Amaryllid family are aware, this does not necessarily mean that the crosses are successful. It often happens in this plant family that the mother plant is stimulated by the foreign pollen to generate progeny which is one hundred percent mother plant, and not the slightest vestige of the father plant is detectable. Anyway, we will just have to wait and see what the results turn out to be.

Ken Smith has kindly donated a quantity of various *Clivia* hybrids seeds, no yellows I'm afraid, but quite interesting stuff. This will be distributed on a first come first serve basis.

Now for a bit of excitement. One of our members is offering a limited amount of yellow four-year-old plants for sale. These plants are being delivered by post, and will cost R60.00 all in and up front. I regret that these are only for South African members. If you require more than one it will be subject to availability. We will hold for a couple of weeks after the newsletter has been posted, so as to give everyone a fair chance. Cheques or postal orders made out to *Clivia Club*. The distribution will depend on the demand. We may have to draw for them and return the unlucky members money.

By the time our next issue appears, we should have settled the question of subscriptions. We are thinking on the lines of \$10.00 for overseas, and R10.00 for the locals. There will probably be about four issues per year....more if you require them. In the end it rests in your hands. I only gather the news and letters in and arrange them for you to read.

N.W. Primich.(editor)

Members

Mrs. W.E. Allison, 10 Vestness Road, Valhalla, 0185. General.
C. Barker, P.O.Box 154, Knysna, 6570. Growing & selling. Looking for yellows.
Herman Burger, Topaz nr.2, Murrayfield, 0184. General
Mej. M. de Bruyn, Bel Monte 43, Maianalaan, Brummeria, 0184 General.
Stephanie Crookes, P.O.Box 4248, Randburg, 2125. General.
E. Ellis, P.O.Box 2824, Jhb, 2000. General.
Mrs. Dulcie Emanuel, P.O.Box 97, Rosetta, 3301. Beginner esp. yellows.
Mr. A. Gibello, P.O.Box 253, Little Brak River, 6503. General.
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.
Keith Macmullen, P.O.Box 2155, Cramerview 2060. General.
Mr. M.D. Mey, 55 Black St., Parkdene, 1460. General.

Mrs. L. Robertson, 59 Harewood Drive, Nahoon, 5241. General.
Mrs. V.M. Rodel, P.O.Box 9206, Cinda Park, 1463.Beginner.
P.E. Shanahan c/o Clivia Club. Beginner.General.
Mr. A.V.V.R. Schweizer, 14B Pioneer Rd., Irene, 1675. General
Mr. J.H. Uys,25, Elbertha St., Stellenbosch. 7600. General.
Willem H.J. van Deventer, Pirokseenstraat 672, Elarduspark X6, 0181. Pretoria. General.
P.Vorster, Botany Department, University of Stellenbosch, Private Bag X5018, Stellenbosch,7599. Hybrids & Cultivars.

Australia

Milton Edwards, P.O. Box 499, Belgrave , Victoria 3160.General.
C.J. Grove, 39 Pandora Drive, City Beach, 6015, Western Australia. Breeder
R. Harrison, P.O. Box 161, Wanneroo, 6065 Western Australia. Breeder.
Les Larsson, 31 Solomon Street, Palmyra, 6157. Western Australia. General.
W. Morris, 37 Brocklesby Road, Medowie, NSW.2301 Breeder.
Ken Smith, 593 Hawkesbury Road, Winmalee, NSW.2777. Breeder.
Kevin Walters, 20 Wyalla Street, Toowoomba, Queensland.4350

Hong Kong

Dennis Tsang, 104 Hing on House, Wo Lok Est, Kwuntong. General.

Japan

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

Sweden

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

USA

Dr. R.L. Doust, 1781 Glen Oaks Drive, Santa Barbara, California 93108. General.
David West, 209 N 18 Street, Montebello, California 90640. General.

Dennis Tsang

Dennis has proposed interbreeding Clivia with *Cryptostephanus densifolius*.The attraction of this putative cross being that the latter species has a purplish coloration. However, there are a few difficulties in the way. Firstly, does *C. densifolius* cross with Clivia? Secondly, does anyone have *C. densifolius*. Thirdly, does this cross make viable plants , or would it be a mule? Perhaps one of our members will make an expedition to the montane forests of Angola and bring back a few specimen plants for us to experiment with.

Yoshikazu Nakamura

When I was a young child, my father owned a Clivia plant.One day, I damaged this plant by cutting it. My Grandfather saw this and rebuked me for my behaviour. I have always remembered this and grew to respect all plants, especially Clivia.

Later on, when I had grown up, I owned some plants of my own. *Alstroemaria*, and *hippeastrum*. Then I got some clivias of my own. I was able to aquire the collection of the late Dr. Hirao, and those of some other

leading Japanese breeders, thus I was able to quickly amass a collection of considerable variety. It is my wish to breed every possible type of clivia.