Odontoglossum Alliance Newsletter

Volume 4

November 2006

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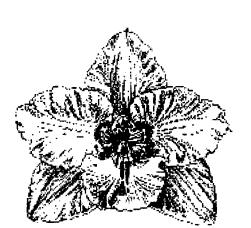
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How I ended up with 100 species Odontoglossum plants at the San Francisco Show

by Steve Beckendorf

I thoroughly enjoyed the WOC in Dijon last year, but it was not a very happy circumstance for several of the vendors who had their plants confiscated. Among the most tragic that I knew about was Socrates Foréro, from Bogotá, Colombia. Socrates specializes in cool-growing orchids and is a jovial, round-faced man who often wears a pith hat, no matter what the occasion. He was staying in the same hotel as my wife, Cynthia Hill, and I were. During breakfasts in the hotel, all the WOC participants introduced ourselves to each other and exchanged recent news and gossip. We heard that the French authorities were holding Socrates' plants in Paris because of irregularities in the paperwork.

During the next few days, as the show opened and the initial rush of excited buyers came and went, Socrates was still unable to get the plants released, even though he had been able to obtain a corrected set of documents and had them faxed from Colombia to Paris. Finally, on Saturday morning (the show would close on Sunday) he came downstairs to breakfast and said he was giving up and leaving the show to go visit relatives in Germany. With sadness he handed to several of us in the breakfast room a brochure that he had had printed specially for the WOC. In addition to listing the plants he planned to sell, it described how he had become infatuated with orchids and his joy at being able to offer his plants for the first time at an international show. Of course, now that joy was extinguished!

Last November I learned that Socrates would very much like to come to the Pacific Orchid Exhibition in San Francisco in February. I was delighted at this possibility because I knew that Socrates grows many odontoglossums in addition to his favorite acinetas and lueddemannias. When I asked the show chair whether there was still a place for another vendor, he said yes, they'd just lost another international vendor and would be glad to have Socrates participate.

When I reached Socrates at Villa Andrea, his nursery, he was delighted and asked how he should send the orchids — as excess baggage accompanying him through Houston to San Francisco, or as cargo sent through another port on its way to San Francisco. After checking with several friends, I strongly recommended sending them as cargo through Miami. Many people, including some professional growers, reported good experiences there and bad ones at other points of entry.

After initially hiring a firm to ship the orchids through Miami, Socrates changed his mind and decided instead on Houston. He thought that because he was flying there with the orchids, he would be better equipped to supervise and assure that they made it through customs and agriculture. Unfortunately, that wasn't the case. When he landed in Houston, the orchids were taken over to the Ag station for inspection the next day. By then Socrates and his daughter Sandra were in San Francisco.

On the following day (Tuesday, with the show opening Thursday evening) we made several frantic phone calls to the Ag people and to the broker in Houston. Finally we learned that his plants were being detained at least another day while a sample was sent for analysis at a central lab. We thought, "Oh no, is this going to be a repeat of Dijon?"

We still had a couple of days to sort things out. However, after some confusion on Wednesday and Thursday, we heard that plants in seven of the eight boxes were infected by or exposed to fungus. One box was released — no fungus. It arrived on Friday and contained several large plants, acinetas and luedemannias, in bloom and intended for the display. None of the odontoglossums, masdevallias, miltoniopsis, kefersteinias, draculas, trichopilias, caucaeas, or pescatoreas were included. Of the approximately 600 plants, fewer than 50 had made it to San Francisco.

For the rest of the show, Socrates and Sandra sat sadly at their booth with these few plants trying to see if they could at least sell them. The remaining plants were still being held in Houston. Near the end of the show, the broker told them that they had a choice — they could either pay to have them treated with fungicide or the plants would go to a rescue center. The treatment would cost about \$1600.

They decided that was too expensive. They would either abandon them, or, they told me, I could have the plants if I wanted to pay for the treatment and shipping. YES!

I knew there were lots of Odonts in the shipment, some of which were part of my preorder, and I couldn't wait to see them (you know how orchid fever works). It took a couple of days to have them dipped in fungicide, dried and repacked. Altogether they had been in transit about 10 days, for much of that time packed tightly together in a Houston warehouse that was not cool, so I was concerned about their condition. However, when they came they were in pretty good shape, most still in bloom (Figs 1,2). Some of the odonts, especially the crispums, were extraordinary (Figs 3,4,5). There were also luteopurpureums, sceptrums, spectatissimums, mirandums, reversums, harryanums, and a wide variety of gloriosums/odoratums that will need to be sorted out (Fig 6).

354 plants survived the fungus and made it to Berkeley. Of these, 163 were odontoglossums, 61 of them crispums. I sold many of the non-odonts and a few of the crispums to friends and was able to recoup my cost for having them treated.

In the first few weeks I lost about 10-15% of the plants, but most stabilized and then began putting out new roots and shoots. Now I hope to bloom many of them to see what they are like. If enough of them bloom before the Odontoglossum Alliance meeting in San Francisco this February, I may be able to donate some to the auction.

Will Socrates be back to San Francisco this year? I'm not sure, but I'm amazed at his and Sandra's persistence. They successfully imported wonderful plants to the Santa Barbara show last March, and I believe have been to several shows since then. If you see them at shows near you, look at the plants carefully; they have some wonderful species, wonderfully grown.

Odontoglossum Alliance Meeting

The Odontoglossum Alliance meeting will be held in San Francisco during the San Francisco Orchid Show at Fort Mason. The show starts with a preview party on Thursday night 15 February 2007 and ends on Sunday 18 February 2007. The Alliance meeting is scheduled for Saturday 17 February. Events will include a tour of several greenhouses in the local area including Steve Beckendorf and Bob Hamilton. Of special oppor-

tunity will be to tour Golden Gate Orchids Seedling house. This is Tom Perlite's business. Tom has agreed that those attendees will be able to purchase plants from the seedling house. There will be a bench set with plants reserved for sale. This is a wonderful opportunity as Tom is one of the hybridizers who consistently produces Odontoglossum alliance plants and flowers that win awards for Tom and his customers.

In the evening we are scheduling a cocktail hour and dinner. We will have a single speaker and our usual auction of fine Odontoglossum alliance plants and associated material. The later has included some original watercolor prints by Nellie Roberts and historically important orchid books now out of print.

We look forward to a good crowd. In this November newsletter are more details on the meeting. This includes suggestions as to hotel locations close to the show. Registration information so we know how many people will be attending the dinner and tour will be in the February newsletter which I will get in the mail on/before 1 February 2007.

The San Francisco Orchid Show is the best show in North America to see Odontoglossum alliance material in the show. The sales area is huge with many opportunities to acquire high quality material.

A good web site to look for hotels is: www.sftravel.com. The specific page is http://www.sanfranciscovisitor.com/bgt.html. A selection of hotels picked from the web site follows:

Travelodge by the Bay (415) 673-0691 1450 Lombard St. San Francisco, CA 94123

Lombard Motor Inn (415) 441-6000 1475 Lombard St.

Francisco Bay Motel (415) 474-3030 1501 Lombard St.

Redwood Inn (415) 776-3800 1530 Lombard St.

Town House Motel (415) 885-5163 1650 Lombard St.

Star Motel (415) 346-8250 1727 Lombard St.

Cow Hollow Motor Inn* (415)-921-5800 Lombard Street

S F Motor Inn (415) 921-1842 1750 Lombard St.

Coventry Motor Inn (415) 567-1200 1901 Lombard St.

Ramada Limited (415) 775-8116 1940 Lombard St.

Buena Vista Motor Inn* (415) 923-9600 PO Box 475517 San Francisco, CA 94147

Chelsea Motor Inn (415) 563-5600 2095 Lombard St San Francisco, CA 94123

Motel Capri (415) 346-4667 2015 Greenwich St.

Hotel Del Sol (415) 921-5520 3100 Webster St.

Best Inn (415) 776-3220

2850 Van Ness Ave San Francisco, CA 94109

These hotels are within a couple of blocks of Fort Mason. These appear to be clean and comfortable, but not elegant. The web site offers reviews of the hotels. The ones marked with an * I have stayed at for previous meetings and shows. They are clean, neat, not elegant, reasonably priced and with parking. I often walked to the show from these hotels.

Please note the previous article by Steve Beckendorf. Steve will be making available of number of these Odontoglossum species available at the auction to be held following the dinner. This meeting should be lots of fun and you are urged to attend and meet up with our fellow Odontoglossum alliance friends.

Our dinner speaker is Juan Felipe Posada of Medellin, Colombia, SA. Perhaps in addition to his prepared talk he will give a few comments on the 2008 Orchid Show in Colombia where he is show chairman. If you are planning to attend this San Francisco meeting we ask you to notify Bob Hamilton, via email, at bob@eecs.berkeley.edu with the subject <u>"SF Odont Meeting"</u> and include the number in your party.

Oncidinae

by Inge Poot

Our guest speaker this month was **Dr. Steve Beckendorf**, a professor in genetics from the University of California in Berkeley, California. He talked about the changes in nomenclature that are taking place in the genus **Odontoglossum** as a result of the genetic studies done on the species in this and related genera. The genus is limited to five Andean countries of South America: Venezuela, Colombia, Ecuador, Peru and Bolivia.

The Oncidium alliance was one of the first groups to be examined on the DNA level to try to find if the relatedness as revealed by their DNA coincides with the old taxonomy devised by comparing mostly flower morphology. This work has been done mostly by Norris Williams and Mark Whitten at the University of Florida and by Mark Chase at Kew Gardens. The first tests were done on a particular spot (locus) of chloroplast DNA. (Chloroplasts are small bodies in cells that have their own DNA and that through photosynthesis supply energy to the cells. It is interesting to note that chloroplasts started out as independent organisms, either parasites or symbiotic organisms, that invaded or were engulfed by the primordial cell and were incorporated into the cell function and eventually came under the control of the cell). Since a cell has only one nucleus but many very similar chloroplasts, it is easier to examine the chloroplast DNA than the nuclear DNA.

Cells are constantly bombarded by radiation and chemical assaults that result in a fairly constant rate of changes (mutations). Any DNA that is involved in a function that will only work in one way and no other

way, cannot be used for these tests, because any random mutation occurring in that part of the DNA results in a lethal error and the resulting changed cell dies.

But there are many genes that work fine even if a change occurs in them. Some of them can have many changes in them and still not be lethal. Such genes or portions of DNA are used to see how different these genes are in different species and genera.

We can therefore estimate how long ago the species must have separated from a related species or genus by counting the accumulated errors or differences in the gene or genes under study in each organism.

By now the nuclear DNA has also been used and the resulting charts of relatedness have been confirmed by using at least 4 to 5 loci on chloroplast and nuclear DNA.

These studies have been largely automated. The charts are generated by a computer programme using either of two methods, with the method used to generate our speaker's charts being "boot-strap analysis". The computer is instructed to generate 10,000 different charts showing the most likely relationships. If 90% of these resulting charts show two species as closely related, then the likelihood of them being truly related is very good.

In the sub-tribe Oncidinae, such a chart shows that:

Cochlioda, Odontoglossum and Symphyglossum should all be Odontoglossums.

Cuitlausiana with about 4 species, **Rossioglossum** with about 6 species and **Rhynchostele** with 15 species, all of which used to be in the genus *Odontoglossum*, are actually far removed from it and should be distinct genera.

Cyrtochilum has had a confused history. It was moved into Oncidium, then into Odontoglossum, but according to DNA analysis should not be in either genus. It is interesting to note that comparing the foliage of Cyrtochilum with that of true Odontoglossums they can be readily told apart without seeing any flowers.

Odontoglossums have laterally slightly flattened pseudobulbs with sharp edges separating the two sides and a glossy surface. When the pseudobulbs dry out, they become even more flattened.

Cyrtochilums also have slightly flattened pseudobulbs, but the two edges are rounded and the surface of the pseudobulbs is dull or matte. When the pseudobulbs dry out they become wrinkled but do not flatten any further, resulting in a more round bulb.

A case in point is the former *Odontoglossum edwardii*, a plant with purple flowers that have darker petal bases and a tiny lighter purple lip. It is really a *Cyrtochilum*.

Within the true Odontoglossums the most popular group, both as species and as parents of the many hybrids, are close relatives of Odontoglossum crispum: crispum itself with sprays of large, flat, white flowers with toothed and crisped edges and variously spotted and blotched with red-brown, Odm. luteo-pur-pureum with light yellow, purple-brown spotted flowers with more star-shaped form and Odm. nobile (formerly called Odm. pescatorei) with large sprays of smaller, full, flat, white flowers with a few red-brown spots and often with slight flushing along lower lateral sepal borders.

Because of their position in the DNA trees, both *Oncidium chrysomorphum* and *Oncidium obryzatum* have now been transferred to *Odontoglossum*.

Odontoglossum cirrhosum and its close relatives form another natural group within Odontoglossum:

Odontoglossum cirrhosum has large inflorescences of spidery white flowers with red-brown spots, a yellow central flush with short red lines radiating out from the centre of the flowers.

Odm. gloriosum has somewhat fuller flowers that are quite fragrant. The inflorescences are often huge with

more than 100 flowers, more densely arranged than the previous species. The flowers tend to have more red markings. The species comes from northern Colombia and Venezuela.

Odm. schillerianum is a small plant with a compact inflorescence of cream flowers with pale to dark red spots and a bright red blotch on the lip.

Odm. blandum has fragrant flowers (like most species in this group). The leaves are a compact 8 inches. Again like most of the group it is floriferous with white starry flowers that are marked with red-brown spots.

Odm. crocidipterum from Venezuela has fragrant flowers whose pale yellow, pointy sepals and petals are variously marked with red-brown, from solid pale yellow to almost solid mahogany. The lip is white. The remarkable characteristics are that the plants are small and dainty, but it frequently produces new lead growths and each lead will produce 2 to 4 inflorescences! A wonderfully promising parent for hybrids!

Odm. *tuctantanum* is a very rare Venezuelan species of which at present there is only one plant outside of Venezuela. It again is reminiscent of *Odm. cirrhosum*, but has a central red spot on the lip. Unfortunately it is very self-sterile!

Odm. hennisit is a recently rediscovered species that has green sepals and petals and a white, bearded lip. The sepals are heavily overlaid red-brown while the lip has red marks.

Odm. naevium is another species that is similar to *Odm.* cirrhosum. It is self sterile and the only plant in cultivation is in the collection of the speaker! Since the plant came from an isolated mountain range in northern Colombia which happens to be in the middle of the current civil war in Columbia, the collection of other plants will have to wait!

Odm. praestans is one of the **problem plants**, since by appearance it seems to be part of the *Odm cirrhosum* group, but is not located nearby on the DNA trees. There may have been a mislabeled DNA sample, or perhaps appearances are decieving. It has pale green star-shaped flowers that are fairly full and flat. It is marked with red-brown spots that are heavier on the sepals and heavier near the tips of the segments.

Near the top of the Odontoglossum tree are several groups that don't initially appear similar to the other Odontoglossums but from the DNA analysis are the next closest relatives.

Odm. povedanum has long inflorescences that re-bloom from the same inflorescence. The flowers are fairly full, with good substance and shiny texture. The sepals and petals are chartreuse with a red-brown band.

Odm. trilobum has long inflorescences that branch near the base. The sepals and petals are yellow with brown to mahogany bars and the lip is white, tri-lobed with pointy tips.

Odm. digitatum is the first species in another **related group** that have a characteristic column shield framing the column - much like the pretty, ruffled, upright collars worn in England during the reign of the Stuart and Tudor Queens. Wilhelm Koeniger proposed a new genus name for them, namely *Stuartcollarense*, but it has not caught on.

The sepals of *Odm. digitatum* are chartreuse with the basal two thirds solid brown. The petals are lighter with three brown lines on the basal two thirds. The lip is white with basal red lines and five big teeth on the crest. This group of species comes from the eastern side of the Andes and needs to be kept cool and wet with no dry rest.

Odm. multistellare is similar to the above species, but has a less high ruff.

Odm. astranthum has huge upright inflorescences of flowers again similar to Odm. digitatum.

A cross with Odm. nobile resulted in flowers that were twice the size of the Odm. astranthum, with chartreuse sepals and petals and with the three lines on the petals coming through. The white lip was nice and wide.

Odm. ariasii has star-shaped flowers with the sepals and petals green with spots rather than the three lines. The lip is white with a yellow base.

Odm. dracoceps has green sepals and petals with one central brown line. The lip is white with a red apical spot and an elaborate callus of big teeth.

Odm. species not described yet was shown. It had yellow petals with three brown basal lines and a brown tip. The sepals were almost solid brown. The lip was white, with big teeth in the callus and an apical red blotch.

Going to the top of the chart we get to the former **Cochlioda** species. Three of the four species turn out to be Odontoglossum species that are adapted to hummingbird pollination. Their lips are strengthened to withstand the beaks of the birds and colours are shifted to red, orange and pink that birds see, but insects do not. They might be put into *Odontoglossum*.

Cochlioda rosea, is a compact plant with full magenta flowers.

Cochlioda vulcanica is closely related to C. rosea but the flowers have very narrow magenta segments. However the plants are easier to grow well and some have been grown to specimen size such as the clone 'Ganesh' owned by our speaker's wife.

Cochlioda noezliana is a little less closely related than the previous two species and it has red to yellow flowers with a three lobed yellow lip.

The previously named Cochlioda sanguinea is also adapted to hummingbird pollination, but on close inspection does not look like a Cochlioda. In DNA analysis it appears to be closer to Odm. praestans. Several years ago it was transferred to the genus Symphyglossum. Symphyglossum sanguineum has small pink flowers. It's position in the DNA trees caused Stig Dalström to move it into Odontoglossum.

Buried in the middle of the top group of the *Odontoglossum* chart is the genus *Solenidiopsis*. This is a puzzle since the flowers seem to be quite different from typical odontoglossums. **Solenidiopsis tigroides** is floriferous and has small, non-resupinate, fragrant flowers with rolled back segments. The sepals and petals are chartreuse and each segment is ornamented with two black blotches.

Solenidiopsis galianoi has flowers with heavy substance. The sepals and petals are light brown and the lip is cream.

Solenidiopsis peruviana according to Icones Orchidacearum Peruviarum has few flowered erect inflorescences. The flowers have pale orange-brown sepals and petals that grade to chartreuse at the base. The lip is pale yellow and the callus is orange yellow with an orange blotch near its apex.

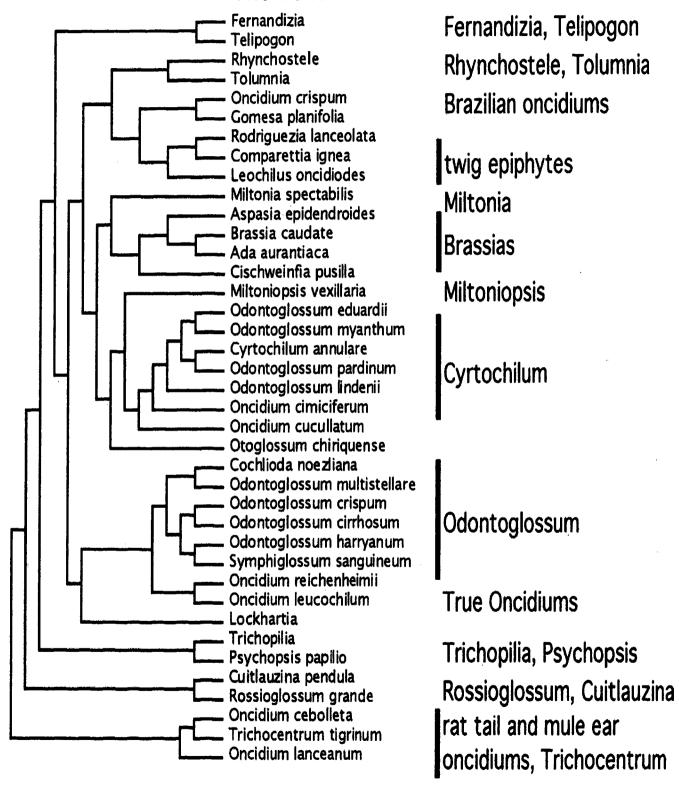
Solenidiopsis rhombicalla also according to Icones Orchidacearum Peruviarum has many flowered upright inflorescences. The flowers are small. The sepals and petals are pale orange brown with two broad chestnut brown transverse bars. The pure white lip has a very prominent callus running almost the entire length of the lip. This callus is chartreuse at the base, becomes green centrally and is bordered by a bright orange rhombiform marking.

Some general comments:

These name changes will cause complete chaos with the naming or rather renaming of multi-generic hybrids. Also it is not sure that the name changes are at an end. Dr Beckendorf indicated that a move is underway to overcome this problem by devising breeding group names rather than the multi-generic names in use at present. These breeding groups could end with "ana". Examples would be Cattleyana for the Cattleya alliance and Oncidiana for the Oncidium alliance.

Cuitlauziana should cross with Rossioglossum, Osmoglossum and Ticoglossum, since these genera are close to it according to DNA analysis.





November 2006

Odontoglossum Alliance Meeting 2008

This past August several of our members attended the Orchid Show in Medellin, Colombia and had glowing reports on all aspects of the visit. The show organizers for the 2008 show have invited the Odontoglossum Alliance to have their annual meeting in conjunction with the show. Plans are underway to make this a reality. The show schedule is as follows:

International Show of Orchids, Birds and Flowers
4-10 August 2008

Monday and Tuesday August 4,5	Setting up of stands 8:00 AM-8:00 PM
Wednesday, August 6	Judging, 9:00 AM-2:00 PM
Wednesday, August 6—	Inaugural Cocktail 7:00 PM
Thursday, Friday, Saturday and Sunday	
Aug 7,8,9,10	Show open to the public 8:30 AM to 7:00 PM
Monday, August 11—————	Taking down of the Stands

August 7th is a national holiday and the day when a traditional parade is held—Sillteros. This is a day when flower growers from nearby rural areas have a parade, sort of a miniature Rose bowl Parade, when each person carries on his back a large floral display mounted on a frame. It is a sight worthy of seeing.

Please see the pictures on page 18 taken at the show this year. In the February 07 newsletter we shall have more information on this event including a report by our members who attended the show this year, James Rassmann, Howard Liebman, Bob Hamilton and John Leathers. Juan Felipe Posada, one of our members and a director of the Odontoglossum Alliance is the show chairman for 2008. Airline expenses, always a little unpredictable, seem to be within reason compared to cross country travel. It would be most exciting to have a meeting in the region of the species of our Alliance. Several of the visitors obtained interesting plant material at the show which now reside in their growing environment on the west coast.

Your management is working to make this meeting a reality and have given up on participation in the WOC scheduled for January 2007. If this can be pulled off, a visit to Colombia, South America, the home of Odonts, it will be an opportunity to see a huge variety of native species, grown under ideal conditions. A chance to see many unusual plants and for collectors, a field day.

President's Message

As I right this message I am also preparing to leave for St. Louis Missouri for the AOS Meetings, while there I will also be touring the Botanical Gardens.

It has been a very hectic fall show season for me with the last one coming up right after I return from St. Louis.

At one of these shows I had a great opportunity to purchase a number of "Jungle Type" Odontoglossum crispums from Orquideas de Colombia Villa Andrea Itda, along with a few Miltoniopsis vexillarias and phalaenopsis. A few of the crispums have bloomed and the absolute elegance of the unline bred flowers is very exciting.

After I reported about the terribly hot summer I had here in Niagara we went into a very very wet and dark fall. So much so that I removed the shade cloths from the greenhouses 3 weeks earlier than normal. There are only a few spikes emerging from the Odms., although the ones that have elongated are much taller and carrying many more buds than ever before.

In this newsletter you will find the final info on the Alliance Meeting in conjunction with the San Francisco Orchid Show at Fort Mason Feb. 15 to 18/07. I'm hoping that as many members as possible could make this meeting and we can truly have a membership type meeting and get as many opinions as possible as to where we should go with the Alliance.

Thank you! Good growing! Hope to meet many of you in February. Mario Ferrusi

Message from the Chairman of the Board

So what is the Odontoglossum Alliance all about? As I see it, the Alliance holds special place among specialty orchid groups. Organizations such as the Paphiopedilum Guild, International Phalaenopsis Alliance and the Cymbidium Society of America are all larger and arguably more influential but their respective focus genera are all readily available at the local grocery or home-improvement store (at least here in the US). Hence, if those fine organizations were to go away, their beloved orchids would continue to be grown, hybridized and enjoyed. For better or worse, Odontoglossums do not enjoy such popularity today, so the role of the Odontoglossum Alliance is that of a true hobbyist's group where members exchange information, plants, pollen and tall tales because we can't get a quick fix at the local orchid club or Wal-Mart. We're special.

As Chairman, I feel that my role is to work with the President and other board members to ensure that the Alliance remains relevant and useful for its members. One area where I would like to focus is in getting more members from outside the US and I am thrilled to see that the new board and Presidency represent the true international character of our Alliance. Our meetings have all been held in the US since 1999 but there has been talk of having a meeting in Colombia in August, 2008. What better location could there be? I will work on updating the web page and I would like to make it available in languages other than English. If someone is willing to translate it into Spanish, French, German, or any other language they prefer I would be happy to get the translation uploaded.

I hope to see many of you at the Alliance meeting in San Francisco in February, 2007. In the mean-time, please contact me with any suggestions you may have at tomandlu@rollyridge.com or 541-754-2335. Tom Etheridge

Orchids



Charlesworth & Co. Ltd. Haywards Heath, Sussex, England

PRICE LIST 1966

UNFLOWERED SEEDLINGS OF ODO NTOGLOSSUMS AND ODONTIODAS

SECTION Ref.: UO/1/66. Date of Issue—January, 1966 (CONTINUED OVERLEAF)

COLOUR GROUP L (Lighter and broken-coloured types, including yellows) Coss No. Seed Parent Pollen Parent Po		KEY TO SEEDLING PLANT SIZES (See photo inside back cover) Community Pots: In Single Pots: UX Small plants in 1½inch pots, averaging 1 growth to 1 bulb and growth UA Small plants in 2in. pots, averaging 1 bulb and growth to 2 bulbs and growth UB Nice plants in 2½-2½in. pots, averaging 2 bulbs and growth to 3 bulbs UC Good plants in 2½-3in. pots, averaging 3 bulbs to 3 bulbs and growth UD Strong plants in 3½-3½in. pots, averaging 3 bulbs and growth to 4 bulbs		each cross may also b	is generally avail be available one si	shows the plant sable at date of issize larger or small	PLAN	eedlings of some	n which e crosses	
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7035 Odm. Nerophion 'Alpha'	7225 Odm. 7212 Odm. 7123 Oda.	Halton, fine var	(7225) (7212) (7123)					UCL UCL	UDL UDL	
Price per plant of all above crosses, according to plant size {	7035 Odm.	Nerophion 'Alpha' (CT. 128) × Odm. Manperor 'Leo' (CT. 291)		— — 9/-*	12/-	_	25/-	_	UDL .	-
		U.S. Dollars:		\$1.25*	\$1.70	\$2.50	\$3.50	\$5.00	\$8.40	

THEN TO CERTIFIED DE AND OTHER CO.

The indication "(CT...)" following the name of a parent identifies our colour photograph (transparency) illustrating the flower of that actual parent. Transparencies may be sent to customers for inspection—and quick return—if requested. (See "Standard Terms—Colour Transparencies"—Page 4).

Crosses are separated into the respective colour groups according to average colour-expectation from each cross. However, in modern crosses of complex ancestry, any single cross is likely to produce quite a variation from plant to plant out of the same seed pod, both as to colour and as to marking pattern. In some cases variations may be so wide that individual seedlings, on flowering, may prove to fall outside the general colour group classification for that cross.

When ordering seedlings, the cross Number is sufficent to identify the cross. There is no need to write out the full parentage in your order. You should also specify the size(s) in which each cross number required and quantity of each.

*Seedlings in community pots should be ordered—and will in any case be charged—on a "per plant" basis, as priced, and not on a "per pot" basis. In community pots minimum order is 6 plants of any one cross.

For Conditions of Sale-see "Standard Terms"-Pages 3 and 4

UNFLOWERED SEEDLINGS OF ODONTOGLOSSUMS AND ODONTIODAS

Community Pots

(CONTINUED)

SECTION Ref.: UO/1/66. Date of Issue-January, 1966

KEY TO SEEDLING PLANT SIZES (See photo inside back cover)

Community Pots: UCom2 Minimum height longest leaf, 2inches

In Single Pots: UX .. Small plants in 11 inch pots, averaging 1 growth to 1 bulb and growth UA .. Small plants in 2in. pots, averaging 1 bulb and growth to 2 bulbs and growth

UB .. Nice plants in 2\frac{1}{2}-2\frac{1}{2}in. pots, averaging 2 bulbs and growth to 3 bulbs UC ... Good plants in 2\frac{1}{2}-3in. pots, averaging 3 bulbs to 3 bulbs and growth

UD .. Strong plants in 3\frac{1}{4}-3\frac{1}{2}in. pots, averaging 3 bulbs and growth to 4 bulbs

An entry in these columns shows the plant size(s) and Category reference(s) in which each cross is generally available at date of issue. A few odd seedlings of some crosses may also be available one size larger or smaller than shown.

SIZE OF PLANT

In Single Pots

	· ·	•		100			g			
	COLOUR GROUP S-(darker and mo	re solid types of colour expectation)	Ī	Size	Size	Size	Size	Size	Siza	}
Cross No.	Seed Parent	Pollen Parent	Cross No.	UCom2	UX	UA	UB	UC	Size UD	
7431 Odm.		 Odm. Ophyras 'Lyoth Orion' AM. RHS (CT. 1038) 	(7431)		OUXS		_	_	<u> </u>	
→ 7401 Oda.	Elpheon 'Lyoth Emperor' AM. RHS (CT. 954)	× Oda. Minosha 'Roke' (CT. 1450)	(7401)	_		UAS	UBS	_	-	
7399 Oda.	Actia 'Lyoth Beacon' (CT. 958)	× Oda. Lautrix 'Brilliance'(CT. 957)	(7399)	_	⊕ UXS	_	_	_	-	8
→ 7198 Oda.	Lautrix 'Brilliance' (CT. 957)	× Odm. Opheon 'Lyoth Jewel' (CT. 961)	(7198)	_	_	_	<u> </u>	ucs	_	jag
										ory R
	COLOUR GROUP W—(Whites—i.e. unfi	owered Odm. crispum × Odm. crispum)								efer
→ 7351 Odm.	crispum 'Polaris' (CT. 1397)	× Odm. crispum 'Lyoth Snowmaid' (CT. 1399)	(7351)	_		UAW	UBW	_	_	Eg
√ 7241 Odm.	crispum 'Sleigh Bells' (CT. 902)	× Odm. crispum 'Lyoth Swan' (CT. 1022)	(7241)	_			UBW	UCW	UDW	8
→ 7058 Odm.	crispum 'Lyoth Supreme' (CT. 1016)	× Odm. crispum 'Hillary 'AM. RHS (CT. 1028)	(7058) (7032)	_	_	_		UCW	UDW	1 1
→7032 Odm.	crispum 'Polaris' (C1. 1397)	× Odm. crispum 'Eucharis' (CT. 542)	(7032)	_	_	. –		UCW	UDW	
		(Sterling:		9/-*	12/-	18/-	25/-	35/-	.60/-	<u> </u>
	Price per plan	t of all above crosses, according to plant size { U.S. Dollars:		\$1.25*	\$1.70	\$2.50	\$3.50	\$5.00	\$8.40	}
		(0.5.20	-	1	1	1 ,2.50	75.50	75.00	******	1

See Pages 10 and 11 for crosses in Colour Group L (lighter and broken coloured types, including Yellows)

The indication "(CT. . . .)" following the name of a parent identifies our colour photograph (transparency) illustrating the flower of that actual parent. Transparencies may be sent to customers for inspection—and quick return—if requested. (See "Standard Terms-Colour Transparencies"-Page 4).

Crosses are separated into the respective colour groups according to average colour expectation from each cross. However, in modern crosses of complex ancestry, any single cross is likely to produce quite a variation from plant to plant out of the same seed pod, both as to colour and as to marking pattern. In some cases variations may be so wide that individual seedlings, on flowering, may prove to fall outside the general colour-group classification for that cross. This extreme will not apply, however, to unflowered seedlings of Odm. crispum × Odm. crispum in colour group W.

For Flowered Plants-see SECTION FO/1/66-Page 19

For "Package Deal" offer of Odont. Seedlings-see Table PD7/UO-Page 15

When ordering seedlings, the cross Number is sufficient to identify the cross. There is no need to write out the full parentage in your order. You should also specify the size(s) in which each cross number required and quantity of each.

*Seedlings in community pots should be ordered—and will in any case be charged—on a "per plant" basis, as priced, and not on a "per pot" basis. In community pots minimum order is 6 plants of any one cross.

For Conditions of Sale-see "Standard Terms"-Pages 3 and 4

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COMPARATIVE SIZES OF UNFLOWERED SEEDLINGS OF ODONTOGLOSSUMS AND ALLIED GENERA offered by Charlesworth and Co. Ltd., Haywards Heath, Sussex, England



INCHES

	(UXS	UAS	UBS	UCS	UDS	Solid coloured and darker types
ategory	 UXL 	UAL	UBL	UCL	UDL	{ (Lighter-coloured, broken-coloured, and yellow types)
C	Uxw	UAW	UBW	UCW	UDW	{ (White types—un- flowered Odm. crispum)

(Please refer to Section UO/1/66, Pages 10 to 13, for prices and availability. Also see Section PD/1/66 (Table PD7/UO), Pages 14/15)

Orchids



Charlesworth & Co. Ltd. Haywards Heath, Sussex, England

PRICE LIST 1967

UNFLOWERED SEEDLINGS OF ODONTOGLOSSUMS AND ODONTIODAS

SECTION Ref.: UO/1/67. Date of Issue-January, 1967 (CONTINUED OVERLEAF)

Community Pots: UCom2 In Single Pots: UX Small plants in 1½inch pots, averaging 1 growth to 1 bulb and growth UA Small plants in 2½in. pots, averaging 1 bulb and growth to 2 bulbs and growth UB Nice plants in 2½-2½in. pots, averaging 2 bulbs and growth to 3 bulbs UC Good plants in 2½-3½in. pots, averaging 3 bulbs to 3 bulbs and growth UD Strong plants in 3½-3½in. pots, averaging 3 bulbs and growth to 4 bulbs		each cross	n these columns s is generally availa e available one si SIZ	able at date of issu	ie. A few odd s er than shown.	eedlings of some	n which : crosses	
COLOUR GROUP L (Lighter and broken-coloured types, including yellows) Cross No. Seed Parent Pollen Parent	Cross No.	Size UCom2	Size UX	Size UA	Size UB	Size UC	Size UD	
Total Parish Tota	7588 7585 7584 7470 7457 7452 7447 7438 7438 7432 7429 7419 7412 7396 7383 7383 7381 7380 7286	UCom2 UCom2 UCom2 UCom2 UCom2 — — — — — — — — — — — — — — — — — —	UXL	UAL	UBL UBL UBL UBL UBL UBL UBL UBL UBL UBL	ncr ncr ncr 		Category References
7106 Odm. Petulum, very fine var	7106 7093 7035	9/-*	12/	18/- \$2.50	25/- \$3.50	35/- \$5.00	60/- \$8.40	

See Pages 12 and 13 for crosses in colour group S (darker types) and for crosses in colour group W (whites—Odm. crispum × crispum)

The indication "(CT...)" following the name of a parent identifies our colour photograph (transparency) illustrating the flower of that actual parent. Transparencies may be sent to customers for inspection—and quick return—if requested. (See "Standard Terms—Colour Transparencies"—Page 4).

Crosses are separated into the respective colour globs according to average colour-expectation from each cross. However, in modern crosses of complex ancestry, any single cross is likely to produce quite a variation from plant to plant out of the same seed pod, both as to colour and as to marking pattern. In some cases variations may be so wide that individual seedlings, on flowering, may prove to fall outside the general colour group classification for that cross.

For Flowered Plants-see SECTION FO/1/67-Page 19 For "Package Deal" offer of Odont. seedlings—see Table PD7/UO—Page 15

When ordering seedlings, the cross Number is sufficent to identify the cross. There is no need to write out the full parentage in your order. You should also specify the size(s) in which each cross number required and quantity of each.

*Seedlings in community pots should be ordered—and will in any case be charged—on a "per plant" basis, as priced, and not on a "per pot" basis. In community pots minimum order is 6 plants of any one cross.

For Conditions of Sale-see "Standard Terms"-Pages 3 and 4

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UNFLOWERED SEEDLINGS OF ODONTOGLOSSUMS AND ODONTIODAS

(CONTINUED)

SECTION Ref.: UO/1/67. Date of Issue-January, 1967

KEY TO SEEDI	ANG PL	ANT	SIZES	(See photo inside back cover)
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Community Pots: UCom2 Minimum height longest leaf, 2inches

In Single Pots: UX . . Small plants in 11 inch pots, averaging 1 growth to 1 bulb and growth

UA ... Small plants in 2in. pots, averaging 1 bulb and growth to 2 bulbs and growth

UB .. Nice plants in 2½-2½in. pots, averaging 2 bulbs and growth to 3 bulbs UC .. Good plants in 2½-3in. pots, averaging 3 bulbs to 3 bulbs and growth

UD ... Strong plants in 31-31 in. pots, averaging 3 bulbs and growth to 4 bulbs

An entry in these columns shows the plant size(s) and Category rzference(s) in which each cross is generally available at date of issue. A few odd seedlings of some crosses may also be available one size larger or smaller than shown.

SIZE OF PLANT

	COLOTE CHOIR S. (Ind.)			Community Pots		•	In Single Pots		•	
Cross No. 7530 Odm. 7431 Odm. 7401 Oda. 7399 Oda.	Seed Parent Opheon ' Majestic'	Pollen Parent Pollen Parent	Cross No. 7530 7431 7401 7399	Size UCom 2 UCom2	Size UX UXS UXS — UXS	Size UA UAS UAS UAS	Size UB UBS	Size UC — — — —	Size UD — — —	Category
7241 Odm. 7058 Odm.	crispum 'Polaris' (CT. 13 crispum 'Sleigh Bells' (CT. 15 crispum 'Lyoth Supreme' (CT. 16 crispum 'Polaris' (CT. 13	1971 1972 1973 1974 1975 1974 1975	7351 7241 7058 7032	9/-*	 12/- \$1.70	 18/- \$2.50	UBW — — — — — — — — 25/- \$3.50	UCW UCW UCW 35/- \$5.00	 UDW UDW 60/- \$8.40	References

See Pages 10 and 11 for crosses in Colour Group L (lighter and broken coloured types, including Yellows)

For Flowered Plants—see SECTION FO/1/67—Page 19

For "Package Deal" offer of Odont. Seedlings—see Table PD7/UO—Page 15

The indication "(CT. . . .)" following the name of a parent identifies our colour photograph (transparency) illustrating the flower of that actual parent. Transparencies may be sent to customers for inspection—and quick return—if requested. (See "Standard Terms—Colour Transparencies"—Page 4).

Crosses are separated into the respective colour groups according to average colour expectation from each cross. However, in modern crosses of complex ancestry, any single cross is likely to produce quite a variation from plant to plant out of the same seed pod, both as to colour and as to marking pattern. In some cases variations may be so wide that individual seedlings, on flowering, may prove to fall outside the general colour-group classification for that cross. This extreme will not apply, however, to unflowered seedlings of Odm. crispum × Odm. crispum in colour group W.

When ordering seedlings, the cross Number is sufficient to identify the cross. There is no need to write out the full parentage in your order. You should also specify the size(s) in which each cross number required and quantity of each.

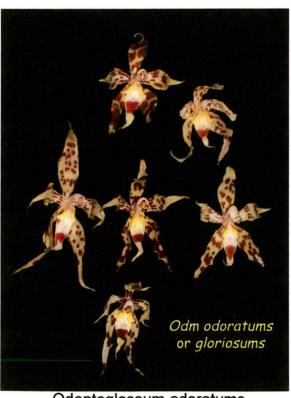
Crosses are separated into the respective colour groups according to average colour expectation from each cross. However, *Seedlings in community pots should be ordered—and will in any case be charged—on a "per plant" basis, as priced, and not complex ancestry, any single cross is likely to produce quite a variation from plant to plant out of the same on a "per pot" basis. In community pots minimum order is 6 plants of any one cross.

For Conditions of Sale-see "Standard Terms"-Pages 3 and 4





Odontoglossum crispum Figure 4



Odontoglossum odoratums Figure 6

Odontoglossum crispum 'yellow' Figure 5



left Juan Felipe Posada right Dr. Howard Liebman





Odm. Ross-Newman

Odm. crispum



Odm. gloriiosum



Odm. wyaytianum

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Orchids



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Orchids



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Figure 2 Socrates Arrival



Odontoglossum crispum montage Figure 3