

Odontoglossum Alliance Newsletter

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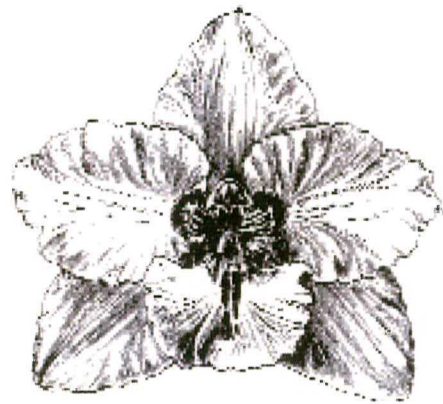
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This Wilsonara was bred at The Orchid House by Norris Powell and named by that very strange fellow from the North-East, Gerald Lawless. Lawless was an obnoxious chap who seemed to be constantly feuding with someone. He had a major physical disability that seemed to cloud his outlook on life and he was always a peripheral attention-seeker of little consequence. I think he lived on Matoaka Road. But the orchid is a stunning example of all that was good about the *Onc. tigrinum* line. It grows easily, breeds freely and is an all-round wonderful plant.



Wilsonara Matoaka Road 'Pacifica'

Odm. Victoria Village

A lovely white alba that Alan Moon thought a lot of. Again, the most interesting hybrid to date is likely Oda Daydream, a bold yellow alba bred by the nearly ninety-year-old Alf Day in New Zealand. There is something to be said for an interest in orchid breeding..... such a habit seems to be the pathway to longevity!



Odm Victoria Village

Oda. Point Nepean

A lovely plum-colored Oda from the Brydon collection. One parent is the old M & H stalwart, Oda Florispum which is Florence Stirling infused again with Odm. crispum. With an Australian name, one might presume that at least some of the cross were grown out by Gerald McCraith. However the only continuation of the line occurred in the Bay Area at Sunset Orchids where Steve Gettel got one of the grex awarded and made hybrids from it. Another fertile Odont languishing and awaiting some new hybridizing interest in 2013!
Odm Shelley x Hannispin



Oda Point Nepean

A strange hybrid, Howard Liebman at his most creative! Grows well with two spikes on the second bulb, interesting patterning, now the question will be: does it breed on? One might hope for a little warmth tolerance too....



(Ada aurantiaca x Onc tigrinum) X Oda Leysa 1

Oda Annette x Torlana

This unusually beautiful flushed type of Odontioda has never been registered by Mansell & Hatcher. Surely it is worthy of a good name and use in hybridizing? One presumes it is fertile, a plant from the Tim Brydon collection



Oda Annette x Torlana

Oda. Tiffany x Joe's Drum

With influence from the seminal Florence Stirling and the great M & H parent, Oda Joe's Drum, this is a beautifully balanced flower of full form and a with a very appealing lip. Again from the Tim Brydon collection.



Oda Tiffany x Joe's Drum

Oda Castle de Stroperry

A big tetraploid Odontioda which based on correct parentage is 75% Odm Stroperry! Not my favorite color but always a strong parent and usually quite good growers in its seedling progeny. One of the great strengths of the Odontoglossum Alliance is that it has colors in such a wide range that there is something for everyone.



Oda Castle de Stroperry

WILS. WILDA BULLARD.

Wils. Wilda Bullard 'Triumph' is a very personally pleasing New Horizon hybrid between Oda Nichirei Sunrise and Onc. trilobum 'Hawk Hill' 4n Named for the late mother of Ray Bullard, a long-time Odontoglossum Alliance member, the plant is a putative tetraploid and had 62 flowers on a branched inflorescence in April 2013. We are looking for the warmth-tolerance in this line as many areas would like to grow plants that are colorful and look like traditional Odonts but with a little more temperature flexibility.



Wilsonara Wilda Bullard
Oda Nichirei Sunrise x Onc trilobium

Odm Pescalo **x Nicky Strauss**

Registered as Odm Pesky, originator unknown, one might suspect Bob Hamilton was the originator. I like the more star-shaped Odonts if the inflorescence is floriferous and this Tim Brydon plant has impeccable lineage which likely will tempt some future hybridizers looking for vigorous pastels.



Odm Pesky

Odm Shelley x Hannispin

Who could not like this hybrid? Colorful, shapely and prolific, a tribute to the vision of Keith Andrew in breeding Shelley and the added hybridizing skill of Bob Hamilton in this combination. A plant that literally lights up the greenhouse with its luminescence.



Odm Shelley x Hannispin

Editors Note:

This material was submitted by Andy Easton. Andy is a consistent provider of interesting and challenging information on the Odontoglossum Alliance world. He consistently provides this for inclusion in our newsletter. Our members are indebted to Andy for his many contributions.

THE *CYRTOCHILUM RAMOSISSIMUM* COMPLEX; old names become like new

Stig Dalström

2304 Ringling Boulevard, unit 119, Sarasota FL 34237, USA

Lankester Botanical Garden, University of Costa Rica, Cartago, Costa Rica

National Biodiversity Centre, Serbithang, Bhutan

stigidalstrom@gmail.com

The genus *Cyrtochilum* Kunth never stops presenting surprises. Striking, as well as insignificant new species appear in a seemingly never ending flow. Some new names turn out to be synonyms of older ones, and some older synonyms turn out to represent distinct species as we go back and re-study the type specimens and decipher obscure descriptions. This time we shall take a look at the *Cyrtochilum ramosissimum* complex.

John Lindley described *Odontoglossum ramosissimum* in *Folia Orchidacea* 1: 16 (1852), from a plant collected in Venezuela by Jean Linden. Lindley placed the plant in *Odontoglossum*, based primarily on the flower morphology. The shapes of the column and the lip were early on considered important taxonomic features, and in *Odontoglossum* the lip and column were supposed to be mainly 'parallel' (in a very broad sense). But then it was discovered that many other and not closely related plants also produce flowers with a similar shape. In addition, not all true *Odontoglossum* species share the same lip-column structure and angle. Based on a broader morphological concept, including vegetative features in combination with molecular analysis, *Odontoglossum ramosissimum* was transferred by me to *Cyrtochilum* in *Lindleyana* 16: 72 (2001). In this synopsis of the genus *Cyrtochilum*, I listed *Odontoglossum amphiglottis* Rehb.f. (originally described as "amphiglottii", which I believe is a misspelling) and *O. sodiroi* Schltr. as synonyms, but added a disclaimer about the creeping habit with an elongate rhizome and dense cluster of flowers of the former, which might indicate that it represents a distinct species. The general shape of the flower, however, does not show any significant difference from the typical *C. ramosissimum*.

In the case of *Odontoglossum sodiroi*, the author Schlechter based his description on two different Ecuadorean collections by Sodiro, unfortunately representing two different species; Sodiro 112 = *C. angustatum*, and Sodiro 23b, which represents what has long been known as "*Odontoglossum*" later *Cyrtochilum ramosissimum* in horticulture and various literature, but in fact is an undescribed species. Since Sodiro 112 is listed first in Schlechter's description, I considered this collection to be the type of this species, which really is a synonym of *C. angustatum*. Sodiro 23b, on the other hand, was in my synopsis (2001) considered to be a synonym of *C. ramosissimum*. Schlechter mentions in the type description that *Odontoglossum sodiroi* is similar to *O. ramosissimum*, and may be the same thing, but that it differs in the base of the lip not being cordate (heart-shaped), and the callus being glabrous and shaped differently. This is a rather confusing statement because the base of the lip of *C. angustatum* is not cordate (hence like *O. sodiroi*), while it is cordate in *C. ramosissimum*, but the callus of *C. angustatum* is pubescent while glabrous in *C. ramosissimum* (hence like *O. sodiroi*). It appears therefore that Schlechter picked one characteristic from each species when defining his *O. sodiroi*. This really 'muddies the water', but with some trepidation I still believe that the name "sodiroi" should be affixed as a synonym of *C. angustatum*, regardless that Sodiro 23b really does represent an undescribed taxon.

So what does the true *Cyrtochilum ramosissimum* look like then? To find out we need to analyze the type specimen carefully and compare the lip-column structure. This is easily done by studying a drawing in the herbarium of the Museum of Natural History in Vienna (earlier known as the "Reichenbach herbarium") of the type specimen (which is located at Kew). The shape of the lip callus of the type differs from the callus on

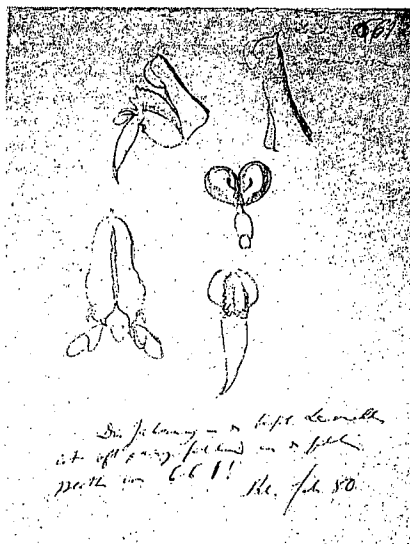
plants from southern Colombia, Ecuador and northern Peru, in being more serrate and sharply angled near the apex of the basal ridge, while entire and apically rounded for the Ecuadorean etc. taxon. The basal callus ridges clasp the outside of the column in the type, while the reversed is the case for the other taxon (Sodirol 23b etc.), with the lateral flanks of the column clasping the outer sides of the callus ridges. These morphological differences, I believe, are significant enough to separate the two taxa, which leaves the much more commonly seen more westerly species without a name.

In addition, recent observations of a plant from the central cordillera in Colombia, reveals that "*Odontoglossum amphiglottis*" also differs from the typical *C. ramosissimum*. Great photographs by Fernando Ramirez, provided by Giovanni Giraldo, show a very distinct looking plant that displays the floristic features described for *O. amphiglottis*, and also coming from the same general area as the type collection. Although the rhizome is not visible in the photo, the densely packed inflorescence is quite different from *C. ramosissimum*. There is no longer any doubt in my mind that this species is distinct from both *Cyrtorchilum ramosissimum* and the other nameless species, which both display a caespitose (abbreviated) plant habit and loosely paniculate inflorescences.

Suddenly, what once was treated as a highly variable taxon turns out to represent three distinct species, one needs to be officially transferred to *Cyrtorchilum (amphiglottis)*, and one needs a scientific name.

LIST OF PHOTOGRAPHS

- A:** Drawing of the type of *Odontoglossum* (= *Cyrtorchilum*) *ramosissimum*.
- B:** *Cyrtorchilum ramosissimum*- from Heidelberg collection.
- C:** Typical habit of the nameless 'western' species. Photo by A. Andreetta.
- D:** Close-up of flowers of the nameless 'western' species. Photo by A. Hirtz.
- E:** Yellow-flowered form of the nameless 'western' species. Photo by A. Andreetta.
- F:** "*Odontoglossum*" (= *Cyrtorchilum*) *amphiglottis*. Photo by Fernando Ramirez.
- G:** "*Odontoglossum*" (= *Cyrtorchilum*) *amphiglottis* - habit. Photo by Fernando Ramirez.



A: Drawing of the type of *Odontoglossum* (= *Cyrtorchilum*) *ramosissimum*



B: *Cyrtochilum ramosissimum*- from Heidelberg collection.



C: Typical habit of the nameless 'western' species. Photo by A. Andreetta.



D: Close-up of flowers of the nameless 'western' species. Photo by A. Hirtz.



E: Yellow-flowered form of the nameless 'western' species. Photo by A. Andreetta.



F: “*Odontoglossum*” (= *Cyrtorchilum*) *amphiglottis*. Photo by Fernando Ramirez.

G: “*Odontoglossum*” (= *Cyrtorchilum*) *amphiglottis* - habit. Photo by Fernando Ramirez.

Tips On In-Vitro Culture of Odontoglossums

By Robert Hamilton

I began hybridizing odonts in 1985 and immediately faced an obstacle; I could not find a reliable resource for in-vitro culture (a.k.a “flasking”) of crosses. After trying multiple vendors I eventually settled on a couple of services that produced reasonably good “flasks”. Regrettably, I found germination rates for my crosses to be far less-than-expected and the yield and quality of the plants returned not to my liking. My solution was to take the bull by the horns and learn to flask. This allows me to make judgments and perfect a level of quality control one can never expect from a commercial laboratory.

At the outset it is important to state that hybridizing within the Oncidinae is fraught with issues. Even within the genus *Odontoglossum*, with an often stated species-number of around 100, the genetic affinities between species are often distant and issues of genetic compatibility affect fertility and hybrid quality. These problems become even more problematic in subsequent generations. Within these 100 species only about a dozen species have thus far seen much use in hybridizing. Given these issues, taking on the intergenerics requires more abandon and caution than suits me. The bottom line is it is easy to make lousy Odont crosses. Noting this, most of my efforts have been used to make traditional Odont crosses.

The process of making an orchid cross and propagating the cross begins with the act of pollination. Following pollination it takes about 8-11 months for odont seed capsules to mature (I’ve seen *Rhyncostele* crosses go 13-14 months). In this modern era of orchid raising the non-symbiotic, or more correctly the asymbiotic method of propagation predominates. This sterile, in-vitro technique for growing seedlings was pioneered by Prof. Lewis Knudsen in the 1920’s and quickly supplanted the former symbiotic method.

There are a couple of ways to harvest and sow orchid capsules (if you call them “pods” the purists will have a

conspiration and correct your misnomer):

The dry “pod” method relies on the capsule reaching maturity, desiccating, splitting open and the embryos dehiscing. The hybridizer must pay close attention as to when this is about to happen and be there to collect the dehisced embryos otherwise they will be lost to the wind. The most obvious problem with this method is missing the event. The downside of this method is that the surfaces of the embryos immediately become contaminated with fungi and bacteria which will overwhelm the embryos, when sown in a flask. If you catch the capsule a few days before it splits you can often just make a cut shake out the embryos, as in the appended paragraph, saving yourself the effort of having to surface-sterilize the embryos.

The other method of sowing is known as the “green-pod” method. The capsule is harvested close to maturity, typically when its end begins to yellow and before it splits. To sow, I soak green capsules in hydrogen peroxide for 4 to 24 hours, dry them, wipe them with alcohol and then cut them longitudinally using a hot scalpel. This prevents dragging organisms from the surface of the capsule contaminating the sowing. The outside surface of a seed capsule from a greenhouse is rife with bacteria, molds and sometime even insects. The nearly-mature capsule contains embryos which are scraped into the “mother” flask.

For efficient flasking a laminar-flow, high efficiency particulate filter (HEPA) work station is a must. This is often referred to as the “hood”. Hoods serve to remove bacteria and fungi invariably found in room air. This prevents these organisms from contaminating the culture medium in a flask. Culture media are composed of nutrient salts, sugar, a gelling agent and often other adjuvants such a banana pulp, charcoal or growth regulators. I’ve tried dozens of formulas over the years. None have performed better than a pre-mix sold by Phyto-Technology Laboratories, P785. The only thing I add to P785 is carbon pigment (not activated carbon) whose purpose is to blacken the medium and shield the developing roots from light. I use carbon made for inkjet printing because it is very fine and does not settle. This makes pulling plants apart when de-flasking easier and results in less damage to the plants. I use P785 at ½ strength for my germinating medium and full strength for my “spreads” (an intermediate flask) and final replates.

To successfully sow dry seed onto a sterile medium, the surface of the embryos (seed) must be sterilized.. This is typically accomplished by using a product such as Chlorox as the biocide. A concentration of 1 part Chlorox to four parts water works well. The seed must then be rinsed with sterile water. My technique is to soak the seed in water for about 24 hours. It will swell and settle to the bottom of a test tube. Then add Chlorox, shake a bit and wait for 15 minutes. This allows the seed to settle. The Chlorox/water sterilant is decanted and sterile water added and the settling process repeated. A single rinse seems enough; a little residual Chlorox does not seem to hurt germination and may help prevent contamination.

My earliest experiences with growing plants from flask were orders from Robert Dugger’s flask lists. These began circa 1983. Robert’s flasks were done by Gallup & Stribling’s, G&S Laboratories, an excellent resource. In those days the container of choice was the Ehrlenmeyer flask which has the disadvantage of a restricted opening. These meant plants were often damaged when taken out through the narrow throat of the Ehrlenmeyer. To prevent this damage my removal technique was simple, wrap the flask in newspaper and use a hammer.

I began flasking in the late 80’s when I chose Mason jars as my containers, a much saner choice than an Ehrlenmeyer. After experimenting with various methods of adding filter vents to their lids for gas exchange I managed to obviate their need. Going in with two other orchid labs we had 12,000 custom, 70 mm transparent polypropylene lids fabricated. A benefit of these lids was their sealing surface was good enough to prevent contamination in the flask room but poor enough to allow the small amount of gas exchange needed by the

plants. The downside is they'll contaminate if placed in a greenhouse environment where temperature swings are more dramatic.

Recently I've switched to a vented plastic container made in Belgium by Combiness. From their website it appears their major market is mushroom producers. Combiness sells their containers as pre-sterilized and un-sterilized. The downside of their pre-sterilized containers is the sterilization process modifies the plastic and they cannot be reused. The plastic sags at the temperatures needed for re-sterilizing in a pressure cooker. I found this out the hard way. The un-sterilized containers are easy to batch-sterilize and then fill under the hood. I fill them from a 10 liter carboy, filled with medium that's been sterilized in a pressure cooker. These are terrific containers, offering the advantage of good air exchange and rapid plant growth. Unlike Mason jars, Combiness containers seem happy in a greenhouse environment and don't contaminate. The only downside is they are a bit pricey after landing them in the US: <http://www.combiness.com/en/>
For me this is not an issue. If I wanted to save money I would not grow orchids.

The sequence of in-vitro propagation is straightforward and begins by sowing the mother flasks. I usually make two mothers to provide a backup should something go awry; contamination is always a risk. When I am lazy I make one.

So far what I have described the routines for flasking Odonts. However, my motive in writing this article is to share a discovery that greatly improves in vitro propagation of Odonts and other orchids. The big problem with in-vitro propagation of Odonts is "proliferation", the tendency of in-vitro plants to produce large numbers of offshoots which have no value, crowd the flask and rob the larger plant of nutrients. I have found a simple way to eliminate this problem.

Plants taken from "spreads", (i.e. the intermediate flask between the mother and final replate) are placed in a sterile stainless pie tray under the hood. The vigorous ones are selected for the final replates. Using a pair of forceps (long tweezers) I remove the root ball and roots found at the base of these plants. I do this using a shearing action which is quick and sure. Once devoid of the root ball the plants are pushed into the final replate flasks media. The roots re-grow quickly. The advantage is that the new roots are thicker and stronger than the ones removed. Given the stage of growth the plants are not set back and seem to adapt and grow even faster. The problem of proliferation is virtually eliminated. If one is willing to dedicate time you can reduce proliferation to almost zero. Having said this I have not found it worth putting inordinate effort into the task.

Anyone wishing more information about propagating Odont seed is welcome to e-mail me:
bob@eecs.berkeley.edu

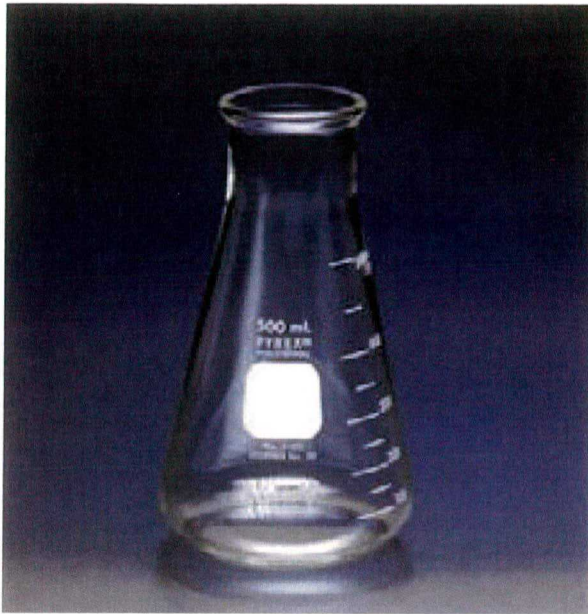


Figure 1 Example of an Erlenmeyer flask with its restricted neck opening. I have no understanding on how this awkward vessel was chosen to become the standard flask.



Figure 2 A commercial laminar flow work station Often called a "hood".



Figure 3 Sorting through the plants taken from a "spread" using a pair of forceps to remove the root ball. At this stage of growth there are only a few criteria that can be sorted by eye. Vigor, size, leaf shape root production are some of these traits. Only a very small percentage of the available plants get ever get replated.



Figure 4 A seedling showing proliferations. The root ball and most of the roots and proliferants will be excised. I often think of the Madame Defarge when performing such work.

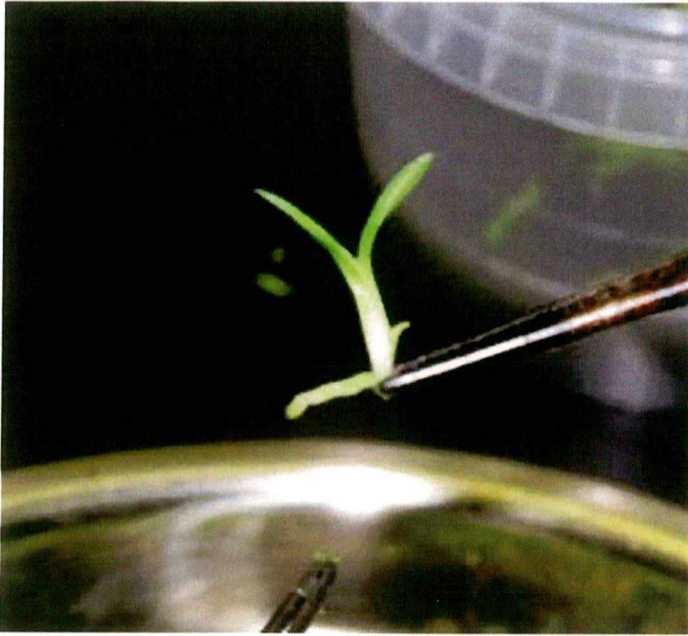


Figure 5. A seedlings with its root ball and most of its root decapitated.



Figure 6. A final replant showing proliferation.



Figure 7. AQ final replant with plants prepared by excising excess tissue. Note, no proliferations!

Dues Notice

I am enclosing with this newsletter the dues notice for those of you whose dues expire with the newsletter. I have put a label on the notice showing your mailing address. Please see that this is correct.

The dues are \$15.00 per year and you can pay for 2 years (\$30.00). Please send a check collectable on a US bank. I am sorry, but I cannot accept credit cards. Please mail in your dues promptly. They are due to me before the August newsletter. I have also enclosed a return envelope for your use.

IF YOU DO NOT HAVE A DUES NOTICE IN YOUR NEWSLETTER MAILING, YOU ARE PAID UP.

Odontoglossum Alliance New Ad Policy

The Odontoglossum Alliance has established a new ad policy. The Alliance is motivated to establish this new policy that will enlarge the numbers of growers growing the Odontoglossum Alliance of plants.

Policy

The Odontoglossum Alliance will publish in the Alliance Newsletter a one page advertisement at no cost to the advisor organization under the following rules:

The ad must be from a member of the Odontoglossum Alliance

The ad is limited to one page of an 8.5 by 11 inch page.

The page may be in color

The page is submitted as a single page a MS Word document with text in the file format doc (NOT docx). The color parts submitted as jpg images.

Along with the page submitted must be the contact person of the information submitted.

The submitting organizations limited to one page per issue of the newsletter but may repeated in subsequent newsletters either as a new page or as a repeated page.

The submitting organization is responsible for all necessary approvals for publication of any items such as credits for photographs.

Encouraging membership in the Odontoglossum Alliance

There is a discussion going on relative to ways to encourage membership in the Odontoglossum Alliance. Two methods have been suggested. 1. Reinstate the web page, 2. put up an Odontoglossum Alliance Facebook page or some other social medium program. All of these in my opinion require a person who will be responsible for managing the information, updating the information and inserting new information. I urge all our members to engage in this discussion with their ideas and more important find a volunteer who will be willing to undertake the necessary work to create and update whatever is the chosen process. I urge you to communicate your thoughts to either Bob Hamilton (bob@eecs.berkeley.edu) or Steve Beckendorf (beckendo@berkeley.edu).