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President's Message

Juan Felipe Posada

These past years have been a very troubled period with Covid forcing us into confinement. If we had to stay far from our plants they would have surely suffered; however, with our greenhouse and nursery nearby, the plants profited from more care than usual, giving us the corresponding reward.

This 2022 a major change was made to benefit the International Odontoglossum Alliance. The IOA applied for and was granted US Tax Exempt Status as a 501-c3 organization whose purposes are educational and scientific. Donations made in the United States to the organization are now tax deductible. With this change in status, the Constitution has also been updated to reflect the change to a tax-exempt organization. A copy of the Constitution is available on the website: www.odontalliance.org Donations can be made using PayPal with the corresponding email address: www.odontoglossumalliance@gmail. com which is linked to the IOA bank account. There is also a link on the website.

We would like to thank all the readers that donated to the fund which made it possible for Wesley Higgins to attend the OHRAG meeting this past spring, where he presented the case to reverse the decision to include *Odontoglossum* in *Oncidium*. Higgins' report on the meeting is included in this issue.

This issue also includes articles from the Kew taxonomists that have completely changed the way that we use to name our plants. And to complete the view, included here is a corresponding article by Stig Dalström that states his position on the subject. A vast majority of us, the Odontoglossum, and allied growers, not to say all, agree with Stig's position and are unhappy with Kew's decisions. The destruction of more than a 100-year horticultural database is a huge loss. Even if we do not agree with recent changes, it is important we provide this information to our readership.

Here we must recognize and thank Julian Shaw, the RHS hybrid registrar, for including the previous identification of hybrids in the corresponding registrations thus maintaining cogency. This is a great help for us, the users who constantly consult the RHS

I look forward to your help to make our organization bigger and more useful to all. Photos, articles, or any other thing that you think can help will be greatly appreciated. Submissions go to IOAJ Editor: <u>jjleathers@comcast.net</u>.

Juan Felipe Posada

list of orchid hybrids.

President, International Odontoglossum Alliance

Editor's Note

John Leathers

The International Odontoglossum Alliance Journal relies on its readership to provide articles and/or photos for future issues. Support from our readers is instrumental to our success. Submissions and feedback from readers at every level of growing Odontoglossums and related species and hybrids is welcome, from the novice, hobbyists, and commercial growers.

For example, articles on culture, growing conditions, field reports, hybridizing, issues with pathogens and pests and photos of what is blooming are great additions to the journal.

If you have an article, comment or photos you would like to share with the readers, you can send them to <u>jjleathers@comcast.net</u>. Preferred formats for submissions are pdf's, Microsoft Office files and jpegs.

Thanks for your consideration,

John Leathers

IOAJ Editor in Chief

What to Do About Cyrtochilum?

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Introduction

The genus Cyrtochilum Kunth, is one of the largest genera among South American Oncidiinae orchids, and also one of the poorest known and difficult to work with for various reasons. Only a few species are well represented in herbaria and live collections and many of the more scarcely represented ones are often misidentified. There are some really spectacular species with large and colorful flowers, but they are often produced by large and bulky plants on several meter long rambling inflorescences that take many months to develop. Most species, however, produce small and often rather insignificant flowers that are not particularly appreciated by growers. New species are also discovered frequently, which indicate how poorly explored the dwindling Andean cloud forests are where a majority of the species occur. The recent scientific treatments are also adding challenges as Cyrtochilum is treated as a single genus by some, and split into Rusbyella Rolfe; Buesiella C.Schweinf.; Dasyglossum Königer & Schildh.; Irenea Szlach., Mytnik, Górniak & Romowicz; Siederella Szlach., Mytnik, Górniak & Romowicz; Trigonochilum Königer & Schildh.; and Vierlingia Königer by others. How to taxonomically handle this large group of plants has been a constant struggle for two centuries and it is time to take an updated look at what we are dealing with. But first a retrospective view.

History of the genus

The genus *Cyrtochilum* was originally placed between *Oncidium* Sw., and *Epidendrum* L., from which it was distinguished by features such as unguiculate sepals and petals, and an abbreviated, spurless convex lip, hence the name (Kunth 1815). Unfortunately, these features are insufficient to delineate this genus from *Odontoglossum* Kunth and *Oncidium*. John Lindley

(1833) initially accepted Cyrtochilum but later recognized the definition problems (Lindley 1838a). He made some new combinations (Lindley 1838b), but then changed his mind and transferred all names into Odontoglossum, Oncidium of Cyrtochilum or Miltonia Lindl. (Lindley 1841). Cyrtochilum ixioides Lindl. and C. pardinum Lindl. were placed in Odontoglossum (Lindley 1852) whereas C. undulatum Kunth (the type of the genus) and C. flexuosum Kunth were placed in Oncidium (Lindley 1855). The names "Oncidium undulatum" and "Oncidium flexuosum" were already occupied so two synonyms were chosen and elevated to specific status. C. undulatum became a synonym of Oncidium ventilabrum Rchb.f., and C. flexuosumbecameasynonymof O. cimiciferum Rchb.f. Unfortunately, "Oncidium cimiciferum" represents a distinct species different from C. flexuosum, so the synonymy becomes invalid. That problem was solved later when the genus Cyrtochilum was re-established and C. flexuosum and C. cimiciferum became separate accepted species (Kränzlin 1917, 1922; Dalström 2001, 2002). And when "Onc." ventilabrum, returned to Cyrtochilum it became a synonym of C. undulatum.

Lindley created the section Microchila in Oncidium for the "larger-flowered" former Cyrtochilum species and divided it into Auriculata and Exaurita based on the presence or absence of basal sepal auricles (earlike flaps at the base of the sepals). Exaurita included *Cimicifera* as a separate group, which consisted of "smaller-flowered" species. Oncidium aureum Lindl. was placed in the section Tetrapetala Micropetala, whereas two other closely related taxa were included in Odontoglossum; Odm. bicolor Lindl., and Odm. rigidum Lindl. The former was treated as a synonym of Cyrtochilum aureum (Lindl.) Senghas, by author Dalström (2001, 2013), although the last word regarding this may not have been said yet. It may actually be the way around so that "Onc." aureum becomes a synonym of C. bicolor (Ruíz & Pav.) Ormerod (Ormerod 2020).

Lindley (1846) included "sectional" names, such as *Cyrtochilum* and *Heteranthium* between the generic and the specific levels in *Orchidaceae Lindenianae*.

Heinrich Gustav Reichenbach *filius* (1849) similarly added "(*Cyrtochilum*)" before the specific name when he described *Oncidium superbiens* in *Linnaea*. He later (1854) described *Odontoglossum festatum* based on the same collection as the type for *Odm. bicolor*, and then (1886) transferred *Oncidium aureum* to *Odontoglossum*.

Johann Georg Beer (1854) transferred all species of *Odontoglossum* to *Oncidium* and also tried unsuccessfully to develop a classification system partially based on vegetative features.

Friedrich Wilhelm Ludwig Kränzlin (1917, 1922) reestablished the genus *Cyrtochilum* and included many former *Oncidium* and small-flowered *Odontoglossum* species. However, he excluded larger-flowered species such as "*Odm.*" pardinum.

Friedrich Richard Rudolf Schlechter (1924) discussed generic definition problems concerning *Cyrtochilum englerianum* (Kraenzl) Kraenzl., and also admitted that the borders between *Odontoglossum* and *Oncidium* were difficult to define (Schlechter, 1924).

Leslie Andrew Garay (1970) transferred all *Cyrtochilum* species back to *Odontoglossum* or *Oncidium* citing the lack of differentiating characteristics.

Leonore Bockemühl (1989) accepted Odontoglossum pardinum (Lindl.) Lindl., and allied taxa in her monographic treatment of the genus but created separate subgenera for them (Subg. Serratolaminata for the Odm. pardinum complex, and Subg. Unguisepala for the Odm. ramosissimum Lindl., complex. Most of the "smaller-flowered" taxa were excluded and regarded as Cyrtochilum species (sensu Kraenzlin), except for Odontoglossum ixioides (Lindl.) Lindl., and Odontoglossum ramulosum Lindl., which were both included in Subg. Unguisepala.

Willibald Königer (1991) described *Cyrtochilum geniculatum* Königer, but without an explanation of why he accepted the genus or what else should be included. Königer and Schildhauer (1994) created the genus *Dasyglossum* Königer & Schildh., for most of the "smaller-flowered" former species of *Odontoglossum* (fide Lindley, Reichenbach and Garay) or *Cyrtochilum* (fide Kraenzlin and Bockemühl), and the genus *Trigonochilum* Königer & Schildh., for the "smaller-flowered" former *Oncidium/Cyrtochilum* species. Königer and Schildhauer (1996) then added several more taxa to *Dasyglossum* and transferred one species back to *Odontoglossum; Odm. megalophium* Lindl.

Karlheinz Senghas (1997) included the genus *Dasyglossum* in *Trigonochilum* and added some taxa. He also transferred *Odontoglossum aureum* (Lindley) Rchb.f. to *Cyrtochilum*, together with other large-flowered former *Oncidium/Cyrtochilum* species.

Author Dalström (2001), then transferred all the above mentioned species and complexes into *Cyrtochilum* based on molecular evidence by Williams *et al.* (2001). Several mistakes were made at this time, however, mainly due to difficulties in analyzing often poorly preserved type specimens, but also because of a lack of field experience where live populations could be studied. Over the years, however, this problem has been gradually resolved.

Until 1996, eight species of Neodryas Rchb.f. were described, with N. rhodoneura Rchb.f. being the oldest (Reichenbach 1852). Initial examinations of the types by the author suggested that they all represent the same species, in a broad sense (Dalström 2001). Subsequential studies and field observations, however, reveal that this is not the case. Although very similar in shape and habit, the access to live specimens show clear specific distinctions that are almost impossible to detect in poor herbarium specimens. The older species of *Neodryas* are easily recognized from the main bulk of Cyrtochilum species due to the campanulate (bell-shaped) flowers, but the vegetative features display clear Cyrtochilum features. Additionally, the flower morphology of N. schildhaueri Königer (1996) differs significantly from that of *N. rhodoneura* and fits well among the other small-flowered Cyrtochilum species. Buesiella pusilla C.Schweinf. (1952) is distinguished by its miniature size but is otherwise a Cyrtochilum. The general morphology of Buesiella ornata Königer (1999) is very similar to N. schildhaueri, which demonstrates insufficient generic definitions. Rusbvella caespitosa Rolfe was distinguished by "various details of the flower" (Rolfe, 1896), but the flower does not display any features not found elsewhere in Cyrtochilum sensu lato, except for the narrowly elongated stipe of the pollinarium. This peculiar fact does actually set this little complex apart from all other species which have a relatively short and broad stipe of various shapes. Vegetatively as well as genetically Rusbyella fits well in Cyrtochilum though.

Dariusz Szlachetko *et al.* (2006) established the genus *Siederella* and transferred *Cyrtochilum aureum*

into it, believing that it would be a monotypic genus. Author Dalström (2013) on the other hand, features four species in this tight little group: *C. aureum* (Lindl.) Senghas, *C. cochleatum* (Lindl.) Dalström, *C. mystacinum* Lindl., and *C. rigidum* (Lindl.) Dalström. Szlachetko *et al.* (2006) also established the genus *Irenea* in the same publication and included 12 smaller-flowered *Cyrtochilum sensu lato* species, mainly from *Dasyglossum*, but also one species from *Trigonochilum*.

Willibald Königer (2010) established the monotypic genus *Vierlingia* and the species "*dickinsoniae*", but failing to recognize the earlier description of this species as *Odontoglossum lapacense* R.Vásquez & Dalström, which was later transferred to *Cyrtochilum lapacense* (R.Vásquez & Dalström) Dalström (2001). "*Vierlinigia dickinsoniae*" is incorrectly accepted as "*Cyrtochilum pardinum*" by the World Checklist of Plant Families, while "*Odontoglossum lapacense*" is accepted as *Cyrtochilum lapacense* (WCSP Nov. 4, 2022).

This uneven history of creating and rejecting generic and subgeneric concepts has caused major confusion in the classification of Oncidiinae in general and of Cyrtochilum in particular for almost two centuries. Part of the problem is due to various authors having different species concepts as well as subjective interpretations and conclusions based on sometimes insufficient and poor quality plant material. However, the greatest problem lies in the fact that traditional orchid classification is based on floral morphology alone. Only Beer (1854) tried to use vegetative features in his system but his attempt failed to gain acceptance. Königer and Schildhauer (1994) mentioned that plants of Dasyglossum and Trigonochilum often are [vegetatively] indistinguishable from "true" Cyrtochilum species but they failed to conclude that these plants may be congeneric. Both Dasyglossum and Trigonochilum are based on difficult to define and variable floral features and differ only from other members of Cyrtochilum sensu lato by having smaller flowers. Vegetative features of plants in Oncidiinae rarely receive attention from taxonomists but are commonly used by orchid collectors to identify plants without flowers. It is relatively easy to separate plants in the Cyrtochilum complex (all taxa mentioned above) from other plants in the Oncidiinae by just examining the plant features. It is difficult and often impossible, however, to distinguish particular species,

or complex of species, from others within the genus, regardless if they are considered "true" species of *Cyrtochilum*, *Dasyglossum* or "*Odontoglossum*" etc.

So what are we going to do about this confusion in order to create a more user-friendly, and still natural and taxonomically correct and perhaps most important, generally accepted treatment of Cyrtochilum? Well, that depends on whether we want to have a large genus that includes all the closely related complexes, or many smaller genera based on irregular and difficult to define morphologic features. Both "roads" are open but offer different advantages and difficulties. The main advantage of assembling all closely related complexes in one genus, regardless of differences in flower size and morphology, is that we will have all species that belong in a monophyletic Cyrtochilum clade/complex assembled together. This large genus can easily be divided into subgenera, sections or whatever we prefer to call "subgroups" in a genus. Any checklist of Andean orchids would then list all species that we discuss here and that are closely related to each other, as cyrtochilums. This is a great advantage! If, on the other hand, we split the genus into many smaller genera, they will be listed alphabetically in different places in a checklist, without any indication of what they are related to. This is a great disadvantage!

There are other situations where keeping closely related species and genera together has advantages, such as in a herbarium and when searching for information in literature. There is nothing wrong in splitting large genera into smaller groups as long as it improves the understanding of the taxa. But in Cyrtochilum there are many cases where we find species with intermediate features that connects the various natural groups. To base a genus on the size of the flower is not a very natural or encouraged strategy either. There are many genera in the orchid family that include species with differently sized and shaped flowers. It is therefore concluded here that vegetative features in combination with any other available information such as molecular data, flower morphology (including micro-morphology), ecology, anatomy, geographic distributions etc., is safer to rely on when distinguishing genera and species rather than relying on flower shape only. Flower color is another treacherous feature to rely on when identifying or describing Cyrtochilum species. Because of the here assumed deceptive pollination syndromes that most *Cyrtochilum* species seem to have developed, a high variability in "cosmetic" floral features, such as size, shape, color markings and scent have been developed. This can be a distinct advantage when it comes to lure stressed pollinators to visit yet another rewardless flower. But it can also fool botanists to "see" new species when in fact it is just a case of natural variation.

In order to have a reasonable understanding of what Cvrtochilum is and what the genus sensu lato contains, it is still preferable to split the genus into subgroups that makes it easier to survey the various complexes. These molecularly based monophyletic subgroups should be as easy as possible to separate from each other, which generally means by sight. So the challenge is to find features, or more importantly, combinations of features that are consistent and can constitute unique profiles for the groups and individual species. While physical features are useful in identification and in creating artificial keys, they can also be misleading. That is why it is important to study live plants, preferably in their natural environment, in order to understand what really distinguishes one species from another. And because some species display a high natural variability with intermediate features that blur the picture, it is important to use combinations of consistent features to separate the various taxa rather than relying on single "key features". Subjective terms such as "small", "large", "many" or "few" should also be used with caution unless there is a definite measurement that goes with it, or if it is in relation to something else specified ("This is smaller/bigger than that!"). It is also true that a good photo or illustration is better than a lot of words. Particularly when we are dealing with technical descriptions, which can be quite confusing and not very informative in cases with similar-looking species.

If we look at the plethora of *Cyrtochilum s.l.* species that have been described, we can see groups that contain members with more or less similar-looking plant habits and flowers. As long as the molecular data agrees we can use these facts in taxonomic treatments. But some older species are based on single flowers or on incomplete herbarium specimens, which means that some important details may not have been correctly interpreted and described. This, of course, tells us nothing about the natural variation

for those species. Some species may also have been misidentified before entering molecularly based matrixes (DNA cladograms), and wrong names have a tendency to be longlived in collections and publications. So the challenge is to find consistent combinations of key features for different species and still create a taxonomic system that is user-friendly, biologically true, informative and practical. Such a system is long overdue!

Characteristic features of Cyrtochilum are rounded, ovoid pseudobulbs, generally with a rather dull surface, sometimes hidden by large foliaceous, distichous bracts, accompanied by comparably thick roots, versus compressed, distinctly edged and glossy pseudobulbs accompanied by comparably thin roots, generally in Oncidium but particularly in Odontoglossum. Cyrtochilum pollinaria generally have a relatively minute, rounded and ventrally flat viscidium, carrying a variably shaped and approximately equally long stipe, and generally large caudicles, versus a comparably larger, oblong and sometimes hooked viscidium, elongate and narrowly rectangular to concave or triangular stipe, often distinctly longer than the viscidium, and minute indistinct caudicles in Odontoglossum and Oncidium. None of these features are unique to Cvrtochilum but the combination provides an appearance that sets this group apart, even to those with a minimum of experience. One exception from this generalized distinction between Cyrtochilum and Odontoglossum and Oncidium sensu stricto is the shape of the pollinarium of the "Rusbyella complex". In this case the stipe is narrowly elongate, much longer than the viscidium and very different-looking from the pollinaria of all other members of Cyrtochilum sensu lato.

In order to demonstrate the great floristic diversity within *Cyrtochilum s.l.*, various species have been assembled in plates that are shown here. These are grouped together based on traditional treatments but without any serious taxonomic finality at this stage. The flowers are also not in scale between each other but merely to give a viewer an insight in what we have to deal with. The authors' ambition is to gradually present as many known species as possible in what appears to be somewhat natural groups. These groups will include validly described but eventually also undescribed species. This we hope will encourage people who are interested in collaborating in an effort to find out how many species there really are out there, and how to handle them taxonomically.

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Figure 1: Samples of larger-flowered "oncidioid" *Cyrtochilum* ("*Exaurita*") species without sepaline auricles at the base of the sepals, including the type of the genus: *C. undulatum*.



Figure 2: Samples of larger-flowered "oncidioid" *Cyrtochilum* ("*Auriculata*") species with sepaline auricles at the base of the sepals.



Figure 3: Samples of smaller-flowered "oncidioid" Cyrtochilum (Trigonochilum) species.



Figure 4: Samples of larger-flowered "odontoglossoid" *Cyrtochilum* ("*Serratolaminata*") species.



Figure 5: Samples of larger-flowered "odontoglossoid" *Cyrtochilum* ("*Unguisepala*", *Vierlingia*) species.



Figure 6: Samples of miscellaneous smaller-flowered "odontoglossoid" *Cyrtochilum* (*Dasyglossum*, *Irenea*, *Neodryas*, *Rusbyella*, *Siederella*) species.

Quod erat demonstrandum Part 1

The true parental origin of *Odontoglossum ×jerezorum* is proven.

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When author Deburghgraeve spotted an attractive but odd-looking *Odontoglossum "schillerianum*" Rchb.f., flower on the FLICKR website in 2015 (Fig. 1), he realized that he was seeing something unusual. An intense correspondence followed between the authors



Fig. 1: *Odontoglossum ×jerezorum* (CJ1). Photo by Carlos Jerez.

Deburghgraeve and Dalström, with Carlos Jerez in Venezuela who had posted the photo on the website. This eventually lead to the description of a new natural hybrid; *Odontoglossum ×jerezorum* Dalström & Deburghgr. (Fig. 2) in the *Orchideenjournal* (2018). The complete story of the discovery of this plant by Carlos and Mauricio Jerez is also featured in *The Odontoglossum Story* as an example of a recently described new natural hybrid (Dalström, Higgins and Deburghgraeve 2020)



Fig. 2: *Odontoglossum ×jerezorum*, drawn from *C.J. Jerez-Rico s.n.* (holotype: MER) by Stig Dalström

A summary tells us that this, at the time, alleged natural *Odontoglossum* hybrid was first collected in 1885 by the French botanist Alexandre Godefroy-Lebeuf. It appears that Godefroy-Lebeuf may have found his plant in what could be the very same location in Venezuela (Fig. 3) as where the Jerez brothers found their plant. According to Jerez, *Odm. odoratum* Lindl. (Fig. 4) and *Odm. schillerianum* Rchb.f. (Fig. 5) are both frequently encountered in that area and hybridization between these species is therefore quite possible and perhaps even not so rare (Fig. 6), as





Figure 3: Ruin in the area where *Odm*. *×jerezorum* was found. Photo by Carlos Jerez.

Figure 4: *Odm. odoratum* (GD164) Photo by Guido Deburghgraeve.



Figure 5: Odm. schillerianum. Photo by Carlos Jerez.



Figure 6: Study photo of the alleged *Odontoglossum ×jerezorum* cross by Guido Deburghgraeve.



Figure 7: Odontoglossum × jerezorum cross (CJ2). Photo by Carlos Jerez.

the Jerez brothers collected 2 different plants of the alleged hybrid on the same occasion (Fig. 7).

Of course, in a case like this, it can never be completely excluded that one deals with a new and distinct species, or that the alleged hybrid originates from a different cross as first suspected. Therefore additional studies are required to prove the taxonomic status. During the latter part of the 19th century the English botanist Robert Allen Rolfe urged orchid growers to remake crosses for identification purposes of suspected natural hybrids, and in *Odontoglossum* there were many. This resulted in the clarification of the parentage of many suspected hybrids that appeared among the massive importations of odontoglossums from primarily Colombia, but also from Ecuador and Venezuela, and to a lesser degree from Bolivia and Peru.

As it serendipitously happened, author Deburghgraeve had both *Odm. schillerianum* (GD411) and *Odm. odoratum* (GD491) in flower at the same time in the beginning of 2016. The "remake" of the cross was therefore eagerly made and the pollination turned out to be successful. Guy Van der Kinderen flasked the seed on December 10, 2016, and this cross (GVK042) flowered for the first time in July, 2022 (Fig. 8). Since the sad closing of the Orchideeën Petrens nursery in Sint-Denijs-Westrem, Belgium, in June 2022, the offspring of the cross have been transferred to Akerne Orchids in Schoten, Belgium. Plants are successfully cultivated there and are available for everyone with interest. For the time being this cross is baptized Odontoglossum "Artejerezorum" as it is no longer allowed to write such a cross with the same name, omitting the proceeding \times and putting a majuscule in front of the name. At last with this cross (GVK042) the authors have material at hand to confirm or reject the alleged parentage of this nice natural hybrid. After some close comparisons of the natural Odm. ×jerezorum with the artificially made hybrid (Figs. 9 & 10), the authors are convinced that their original conclusion was correct and that Odm. × jerezorum indeed is a proven cross between Odm. schillerianum and Odm. odoratum.



Fig. 8: Odontoglossum "Artejerezorum" (GD905). Photo by Guido Deburghgraeve.



Fig. 9: *Odontoglossum ×jerezorum* (CJ1, CJ2), and *Odm*. "Artejerezorum" (GVK042). Study photo by Guido Deburghgraeve.



Fig. 10: *Odontoglossum ×jerezorum* micro anatomy study photo by Guido Deburghgraeve.

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Can a Great Orchid Plant from a Poor Cross Prove to be a Great Parent?

The Story of Marfitch 'Howard's Dream'

Howard Liebman

The year was 1977 when I made an intergeneric hybrid cross of *Miltassia* Charles M. Fitch by my *Odontioda* Fremar "Perlita". Little did I know that Robert Dugger, at about the same time had made an identical cross using his lovely, I believe AOS awarded, *Oda*. Fremar var. Solana. I do not know what his *Miltassia* looked like; however, every clone of C.M. Fitch I have seen looks similar. I can say that his Fremar was superior to my plant.

My pod was sown at Gallup and Stribling, producing three-lovely replate flasks. In those days my seedling culture was far from adequate and only 6 plants reached blooming size. All six plants were good growers, but slow to reach blooming size and with bulbs bigger than either parent. In 1982, on a visit to Bruce Cobbledick's Unicorn Orchids greenhouse in Daly City two plants of Bob Dugger's cross were in bloom. The flowers on both plants were large, starshaped, well spotted with a vibrant lavender purple color. The major problem with both plants, despite having large bulbs, their inflorescence had only 4 crowded flowers on a one-meter inflorescence. Bruce told me that he planned to keep the plants for another blooming to see if their inflorescence improved.

I bloomed the first three seedling of my cross in late 1981. The first two plants produced darker flowers than the flowers I saw in Bruce's greenhouse: however, with an even worse inflorescence. The third plant produced a six-foot spike with 5 well-spaced very large, star-shaped dark purple flowers. I was excited about the potential of the plant and boldly gave half the plant to Ned Nash at Steward Orchids. I told him that he should clone the plant and that it would receive an FCC from the AOS. The same year I moved to Boston to begin a two-year post-doctoral fellowship at Tuft's New England Medical Center. This ended up being 10 years in Boston, four at New England Medical Center and six at Boston City Hospital, Boston University. After 3 years, my wife and I moved to Newton, Massachusetts where I built a greenhouse to grow Odonts. A year after I gave my



Beallara Marfitch 'Howards Dream' Photo by John Leathers.

plant to Ned Nash, he called me to complain that I promised him that the plant would get an FCC and he had mericloned it, but it only bloomed with 4 flowers. He finally admitted that the bloom spike was from the top of the bulb, and he admitted that the flowers were spectacular. During my years in Boston, I would travel to LA at least twice a year to visit family and would frequently visit Stewarts in Santa Barbara, but never thought to ask about the *Beallara*.

Two years later, still in Boston, I received another call from Ned reminding me again that I had lied to him. He finally showed the plant, now registered as *Beallara* Marfitch by Robert Dugger and it only received an 87-point AM, (although two judges gave the plant 90 points). The plant had eleven 10+ cm flowers on a single inflorescence. In addition, he had a good number of meristems that would be ready to sale within a year and likely bloom in 2 years. I no longer had my division of the plant, since it went in 1981 with the rest of my collection to New Zealand with Andy Easton. I had Ned send me two meristems of the awarded plant given the varietal name, "Howard's Dream". During the years spent in Boston I made two orchid friends, John Miller with whom I would set up a small Odont exhibit in the yearly orchid show. Our mutual love of orchids led to the two of us, along with other Odontoglossum advocates, in establishing the Odontoglossum Alliance. I believe that without John's support the Alliance would not have survived. Even after I moved back to Los Angeles, John would either fly out to San Francisco or Los Angeles, where he could visit an old friend, after which I would pick him up for a 5-hour drive to San Francisco. We would share a motel room, attend the San Francisco Orchid Show, and visit with other Odont growers. The other orchid friend I made during my years in Boston was Victor DeRosa who had a large orchid nursery in Natick, Mass. Victor had acquired the Odontoglossum collection of L. Sherman Adams nursery.

I'll digress, it was from this collection that Maurice Lecoufle of Vacherot and Lecoufle acquired a plant their nursery had RHS awarded and later meristem under the incorrect name of *Odontioda* Chargia "Victor". The plant was obviously a hybrid derived from *Cyrtochilum edwardii*. Sadly, by the time I came to know Victor, he had lost 80% of the Sherman Adams Odont collection when the roof of the Odont greenhouse collapsed after a major 1978 snowstorm. However, Victor did have the original Sherman Adams cross book and list of the plants in the collection that he purchased. He was kind enough to let me make a Xerox of the cross book and list. Using the list of plants received from Sherman Adams, we finally identified *Oda*. Chargia 'Victors' correct identity, *Oda*. Zena, (*Oda*. Devosiana × *Odm. nobile*) registered by McBean's in 1930.

Returning to the story of *Bllra*. Marfitch 'Howard's Dream', by the late 1980s and early 1990s, I began to see meristems of this plant in florist shops and orchid shows. One day in 1993 while walking down the Champs D'Elysee, with my wife, Dr. Ilene Weitz while in Paris for a medical meeting we came



Beallara Sophie Liebman 'Rustic Canyon' #5 AM/AOS

upon a large window of a florist shop with 6 large blooming meristems of Marfitch in full bloom. Her comment to me is that I finally made it to the "Big Time"! When I returned to Los Angeles, I decided to finally try and breed with this plant. I made a cross of *Oda*. Florence Stirling 'Celeste AM/AOS" on my Stewart's meristem of Marfitch. I was able to raise 8 seedlings of the cross to blooming size. Sadly, of the six seedlings I bloomed, none were in my opinion as good as Marfitch and so I decided to move on, focusing on Cyrtochilum breeding.

Seven years later, the Marfitch was again in bloom with its best show yet and next to it is a dark red Oda. Burning Bed which I had received from Bob Hamilton so I decided to try again. After 10 months the pod was sent to Gallup and given the hybrid number 1531. I always send several pods to Gallup at the same time. The reason I mention this is that frequently my cross numbers are mixed during the green pod sowing. In this case, it happened again and there was no reported germination in cross, but a Cyrtochilum cross 1564 produced massive amounts of seed and I decided to raise three flasks. They grew like weeds, often making two growths per bulb. However, it became evident that the growth habit was not that of a cyrtochilum. When the first plant bloomed, there was no doubt that this was my Bllra. Marfitch hybrid. The first to bloom was spectacular. It even received the stamp of approval from my highly critical friend of 40 years, Andy Easton. It was shown and awarded an 88-point AM/AOS and this year was awarded the Milton Carpenter award from the AOS for the finest oncidium intergenertic hybrid shown in the AOS Judging system. I have now bloomed 4 plants and recently seeing a photo of the first seedling I gave to Russ Vernon which he bloomed, I believe that this may be the most uniformly high-quality hybrid I have yet made. Registered as Beallara Sophia Liebman, after my daughter. I will probably show my #3 plant with its lovely pattern. I have remade the cross and plan to cross Marfitch this year with Oda. Petit Port 'Woolsey", the parent of Burning Bed. Interestingly, Beallara Sophia Liebman has bred with Oda. Joe's Drum var. Eric; hopefully, with great results. My conclusion to the question, Can a Great Orchid Plant from a Poor Cross Prove to be a Great Parent? Even from a mediocre hybrid a great parent can arise!

Adventures In Fernwood

My adventure began like any other, at home, in the greenhouse. Looking around I wondered, what can I do, better? My plants just weren't growing to their potential. I thought they could be growing better. I fondly remembered the *Odontoglossums* and *Odontiodas* I saw in displays at The Pacific Orchid Exposition in San Francisco and at the Santa Barbara International Orchid Show; these were not those. I had to do better.

I set out to improve my culture. I record temperature and humidity data for my greenhouse, so I knew that those were in a "happy" range for *Odontoglossums*. My fertigation was measured at 350-450 ppm TDS with my municipal water supply starting at 20-50 ppm. The shading is Aluminet at 60%, which is probably a bit heavy for Seattle area winter. However, in the summer a plant or two develops a touch of pink in the leaves, good sign the light level is adequate. That left the media for me to investigate.

I recalled a clue to the X on this treasure map. Andy Easton once mentioned that his best culture when living in New Zealand was in tree fern fiber. I thought I would explore that lead and see where it took me. I ordered bags of Fernwood(TM) tree fern fiber and repotted a portion of my collection into tree fern.



New Zealand Tree Fern



Sample of New Zealand Tree Fern

The plants responded vigorously, as expected when repotted into a quality, fresh media. I was excited by this and the next year I ordered more bags and repotted the rest of my collection into Fernwood. I even did due diligence and spied upon the progress of my plants by unpotting a few and inspecting their roots. I was not disappointed by their progress. Encouraged, I held my head high and marched forward victoriously, assured I had solved my media problems.

I was further lulled into this false sense of security by the exuberant blossoming this last spring, just prior to the Northwest Orchid Society's spring Flower and Garden Show. Some of the plants had been in their pots for three years and were beginning to show signs



Northwest Orchid Society Exhibit

of decline from the previous year; however, they still performed majestically.

The realization set in that I had become distracted from my goal of growing the best plants that I could grow. Constant demands on my time took me away from doing the best culture possible. Despite this neglect the plants valiantly continued forward. In fact, I was amazed at how well they performed even with a level of neglect.

After the show, I committed myself to redouble efforts in caring for these plants and growing them to their highest standards. My first order of business was repotting the entire greenhouse. However, this time I inspected the plants to see what was working well and what wasn't. After all, three years was a long time for some of these plants to be in the same pot and media.

I observed that plants that were doing well had the following things in common.

- They were in shorter pots.
- They were in pots with side vents.
- They were generally more moisture-loving plants.

The plants that were not doing well had the following things in common.

- They were in tall pots.
- They were in very large pots.
- *Miltoniopsis*, the harryanum complex, and the thick-rooted *Oncidinae* did not do particularly well.

I formulated a new plan to reach the goal of growing plants to their best possible potential.

For the Miltoniopsis, the harryanum complex, and thick-rooted *Oncidiinae*, I reverted to a classic bark, perlite, and charcoal mix. The *Miltoniopsis* I potted into clay pots.

For the rest of the plants, I decided to forge new ground based on what I had learned selecting mesh or net pots for potting up plants. These met the criteria of both being short and having improved ventilation. I had decided that I could always water more if a plant was dry, it was very hard to take water out once the media stayed too wet.



Net pots from left to right - 5", 3.5", 3" and 2"

I also noted that in the larger and tall pots the media had become dense and sodden after a couple of years. All the roots of the plants grew around the inside surface of the pot. This is not a new discovery and I am not the first to notice it. There were several products on the market that try to address this, pots with cones in the center, etc. I had used some of these products; my main complaint is that with the clear pots I grew a lot of algae and moss on the inner surface of the pot.

Instead, I decided to take a tried-and-true approach of opening the media by using large horticultural perlite along with the Fernwood. I used a mix that was approximately 30% perlite and 70% Fernwood, this varied depending on how I mixed it and where it was in the container.

Confident with my new mix and new pots I blazed ahead and repotted the entire greenhouse. It was a cathartic journey to get all the plants into the same mixt and the same type of pot. Because the plants had performed so well, I was able to take the backs of a lot of plants and send them to a friend who was interested in enlarging his *Odontoglossum* collection.

Now that the plants have been growing, I've started to see results with new mix and new pots. The plants have responded with surprising vigor. A number of them growing two leads and even some growing leads from back bulbs as well.

I was worried about root penetration into the media. Some of the larger plants have roots slowly escaping from the mesh in the lower portions of the pot. Some of these plants will soon need repotting since they



Mature Roots

will outgrow their pots again. I will be able to inspect the root penetration throughout the entire media.

The one thing I have learned is hindsight is 20/20. As I cast my eyes forward, I can't help but wonder if I

didn't make mistake а using some of the smallest size pots. It isn't hard for me to keep them wet. I just water them a little more often. The issue is there is less media for the roots to explore so



Seedling

in the smallest pots they go on a little journey of their own. I suspect that a small pot with less vented area will be better in terms of root management.

What horrors await? Nothing that can't be fixed with another pot and another day at the repotting table. The adventure never ends!

Hybridizers Notes

Andy Easton



Oda. Donegal (*Oda*. Tipples × Saint Clement)

Interestingly, the name Donegal has a Mansell and Hatcher connection, they named a green *Cymbidium* as Donegal in 1975! Here we see a potentially very useful warmth-tolerant hybrid which although a bit dark, will surely brighten when grown under elevated temperatures. The pictured flower is a work in progress and must, when mated to other *Odm. trilobum* offspring, give us notable advancement in the type.



Oda. Entranced (Pesky Trance × Joe's Drum)

Two pictures, the first taken from a Mathers' Orchid Foundation post and the second from a seedling in Pacifica. The first is particularly well-colored but the second is typical for the crossing. Good growability in the grex and distinctive patterning. Interesting how orchids get around. From a crossing in California to El Retiro to the United Kingdom. I would use both in hybridizing but obviously seeking varied pathways. The petal markings of the second selection are always eye-catching.





Odm. nobile alba 2n

(*Odm. nobile* 'Bull's Var' × *Odm. nobile* 'Plush')

Not the easiest plant to grow though cultivation on cork or wood slabs help. We knew that half of Keith's *Oda*. Shelley (*Oda*. Heatonensis \times *Odm*. *nobile*) hybrids carried alba genes and this was confirmed when a hybrid with the diploid *Odm*. Parade gave the expected 50% alba complement. You never have to look far in Odont hybridizing to see wonderful insight of Keith Andrew!



Odm. Leprechaun 2n

Interesting combination of three biggies (*Odm. crispum, nobile* and *harryanum*) with 25% *Odm. trilobum* thrown in. Very impressive spray, a chance for some green lines maybe and of course that vital warmth-tolerance in significant measure



Oda. Prince Posey

This amazing hybrid is 50% *Cochlioda sanguinea* from the genes of both parents. Only a 35mm flower but a good and long-lasting spray. I used *Cda*. Lois Posey once and was not impressed with the result but here one can see a breakthrough, heavily Cochlioda-influenced hybrid, that opens up many interesting hybridizing avenues. The color is one maybe new to Odonts and a further hybrid with something like the lilac strain of *Odm. crispum* seems like a no-brainer.

Odm. Extraria offspring

Odm. Extraria (*Odm. crispum* 'Xanthotes' × *Odm. laeve* alba) in its alba iteration was bred by David Stead back in the wonderful Mansell and Hatcher days. These four pictures show some first generation *Odm.* Extraria progeny. The line is extremely floriferous and quite vigorous for an alba type. One has to wonder whether either of the two parents have survived in cultivation and maybe not too many of the alba Extrarias are circulating either. Plants exist in the US and Colombia but probably are extinct in Britain by now. It's sad how these treasures are so easily lost.



Oda. (Quennevais x Extraria)



Oda. (Extraria x Augres)



Oda. (Samares v alba x Extraria)



Odm. Extra Nobile



Oda. Zena



Oda. Fractal

Oda. Zena and Oda. Fractal

Amazing really, how could something as colorful as *Oda*. Zena remain unused for over 90 years after its registration by McBean's in 1930? The first picture is the said *Oda*. Zena and the second jumps up in 2022 from the crossing of *Oda*. Zena with the delightful *Oda*. Prince Vultan. The key to the color is what taxidiots call *Cyr. edwardii* but as far as I'm concerned it's an Odont and the F1 fertility is a good indicator of the closeness of the relationship. I don't anticipate significant warmth-tolerance in *Oda*. Fractal but surely a shot of a 4n *Odm*. Tribbles would be a wise step forward.



Odm. Chryseum 4n *Odm*. (Excellens × *nobile*)

So this interesting hybrid is the 4n version of a Sander's 1914 registration. Really white, multi-branching and a truly memorable lip. I find it astonishing that there has not been one *Odm*. Chryseum hybrid ever registered..... we tend to think all hybridizers from the early part of last century were innovative and forward thinking. I'm coming round to the view that a good number of them were blinkered!



Odm. Intermezzo 4n *Odm*. (Pesky Nicky × *nobile*)

I always like the whites heavily influenced by *Odm. nobile* more than the *Odm. crispum* lines. Of course, due to cheating in days gone by, a dash of *Odm. nobile* always enhanced white *Odm. crispum* lines even if the stud book was in error!



(Odm. Bic-ross 4n × Cyr. leopoldianum)

In all its hybrids, *Odm*. Bic-ross 'John' 4n is extremely dominant. We have a Bic-ross hybrid with *Odm*. *nobile*, *Odm*. Noble Ross 4n and it would be hard to distinguish from this one. The first *Odm*. Noble Ross hybrid has bloomed and it is still showing little of the other parent!



Oda. Christine Jorgensen 'Vanity Fair' *Oda.* (Murray River × *Odm*. Hildescheim)

A reminder of the late, great Gerald McCraith who bred *Oda*. Murray River which came to Bob Hamilton via Clive Halls at Mt. Beenak Orchids. Intense yellows with a patterned overlay are fairly scarce and this selection has great shape.



Odm. Tirade 2n *Odm*. (Tribbles × Parade)

Shape like this is noteworthy, especially in a diploid combination. The plant is blooming on both sides of the bulb and with 50% warmth-tolerant ancestry on the pod parent side and alba genes from the pollen parent, this must be an enticing breeding prospect. I firmly believe Odont enthusiasts of the future will look upon this plant as dynastic!

Odontoglossum Alliance Journal



Ada. aurantiaca 'Big' and *Ada. aurantiaca* 'Gigi'

One might suspect a ploidy difference between the two forms of the species shown?? My knowledge of *Adas* is minimal but I certainly would be looking at variety 'Big' if I planned any *Ada*. hybrids.

The two hybrids between Ada. aurantiaca \times Odm. Panise and Ada. aurantiaca \times Cda. noezliana could not be more different. Adioda Jersey is much larger and has an intensity of the orange color that always draws the eye. The Adioda Saint Fuscien comes from a much earlier era and is intensely red with a luminosity that sets it apart and a spidery form that seems entirely appropriate.



Adioda. Saint Fuscien



Adioda. Jersey

OHRAG Meeting Report, 24 May 2022

Wesley Higgins

The Orchid Hybrid Registration Advisory Group (OHRAG) met at Royal Horticultural Halls, London.

One of the agenda items was *Odontoglossum* considering "The *Odontoglossum* Story". The Group had discussed *Odontoglossum* at three previous meetings.

The Group stated that it is apolitical and considered a petition to be a political instrument.

A miscommunication with an OHRAG member placed the validity of the supporter list in question.

Some members were concerned about losing face considering the previous *Sophronitis* problem.

The authors were congratulated for beautiful comprehensive book and Stig Dalström acknowledged to be the world expert at species level in these orchids.

Discussion:

I opened with: Classification is an end-user tool used to identify organisms and to understand phylogenetic relationships. As such this tool should be user-friendly by organizing taxa into recognizable groups. DNA has provided a robust phylogeny than causes botanists to reexamine the plant morphology.

Chase responded that *Oncidium* sensu lato was a simple user-friendly classification; I disagree.

I agreed with Chase that adding taxa or gene regions to the DNA phylogeny was unlikely to make any major changes the overall topology. However, I advocated for a total-evidence analysis where morphology is included in matrix before analysis.

I supplied the group with the suites of morphological characteristics that define each clade sensu Dalström (attached).

The suites of characters were criticized for using terms such as "with very few exceptions," "but not always," "exception", and "sometimes." Any botanist that works with keys will tell you that "always" or "never" are terms not used for living organisms.

Chase inferred morphology was also used in his analysis; it was not, the characters were mapped on the DNA phylogeny using the same technique as Dalström. Chase dismissed the morphological suites of characters as simply *Oncidium* characteristics.

The *Oncidioides* section has plants like *Odontoglossum* and flowers similar to *Oncidium*. The species occur at intermediate elevations between *Odontoglossum* and *Oncidium*.

Sigmatostylix is a clade of circa 60 *Oncidiinae* taxa that are clearly not *Odontoglossum* or *Oncidium*.

Since *Sigmatostylix* is a sister clade to *Odontoglossum s.l.*, the *Oncidioides* section clade must be included in *Odontoglossum*.

Sigmatostylix was dismissed by Chase as just a small oddball *Oncidium*.

The group expressed the opinion that there is an emotional attachment to name *Odontoglossum*.

While I do not have an emotional attachment, I think that assessment is correct.

When Chase fell back on the argument that *Oncidiinae* was his PhD project that demonstrated his emotional attachment.

The hybrid Registrar pointed out the problems with having a dual set of hybrid registrations. There can only be one registrar for any plant group. However, a redesign of the registration database may allow capture of such synonym data.

There was a confidential ballot taken. The results were:

Accept the revised concept of *Odontoglossum* (Dalstrom, Higgins *et al.*): 1 vote. Accept the enlarged Oncidium (Chase et al.): 6 votes, Abstentions: 1.

Consequently there is no change in the plant names and generic concepts currently used in the Register of orchid hybrids.

The group was not in the mood to change previous decision to accept *Oncidium* sensu Chase et al.

My Recommendation to IOA: continue to publish *Odontoglossum* data.

It would take a very strong argument to conserve the name *Odontoglossum*.

In his lifetime, Constantine Rafinesque made controversial contributions to botany and was severely criticized; however, many of his names are in use today.

Respectfully submitted Wesley Higgins

Generic Morphological Features for Oncidioid DNA Clades

The following are the suites of characteristics that unite each DNA clade.

Odontoglossum: Sections *Auriculatum*, *Canaliculatum*, *Coloratum*, *Lobulatum* and *Parviflorum*.

- Strictly upper elevation Andean species.
- Pseudobulbs glossy, distinctly compressed (with very few exceptions).
- Pseudobulbs sometimes mottled with purple.
- Generally bifoliate pseudobulbs, with very few exceptions (*Odm. blandum*, *Odm. cirrhosum*).
- Ovary generally parallel with the column.

• Base of the lip generally parallel with the column, with few exceptions (*Odm. harryanum* et al.).

• Lip connected with the column either by a basal triangular "suture", by lateral "seams" or by a central longitudinal ridge.

• Well developed, elongate stipe, placed on a relatively large ovoid, cushion-shaped, ventrally flat or hooked viscidium.

• Pollinarium generally presents the sticky ventral side of the viscidium in a horizontal plane, or slightly angled backwards, so that it is hidden from a frontal view.

Odontoglossum: Section Oncidioides.

• Andean and Central American (Costa Rica and Panama) species found at intermediate elevations between core *Odontoglossum and Oncidium* species.

• Pseudobulbs unifoliate, with the exception of *Odm. pictum*, which can produce two apical leaves on larger plants.

• Pseudobulbs glossy, more or less compressed with sharp edges and generally mottled with purple.

• Inflorescences rarely producing abortive flowers (*Odm. trinasutum*).

• Flower morphology similar to *Heteranthocidium* and *Oncidium* sensu stricto in general.

Sigmatostalix:

• Plants generally small (for the *Oncidium s.l.* clade), often twig-epiphytes.

• Pseudobulbs generally strongly flattened and sharp-edged.

• Plants with leathery but flat and rather thin leaves.

• Flowers without a spur, but sometimes a slight chin.

• Flowers small (for the *Oncidium s.l.* clade), arising from dense clusters of bracts.

• Column elongated, slender and arching to various degrees.

• Some species produce floral oil.

Chamaeleorchis:

• Generally lower to intermediate altitude, mostly Andean species but a couple occur in, or from Panama southwards along the Andes to Peru and northern Brazil.

• Generally, with a relatively short and stout column, thickest at the base.

• Pseudobulbs generally distinctly flattened with sharp edges, slightly elongated sub- rectangular with rounded edges ("corners") apically.

• Generally unifoliate and sometimes purple mottled. No distinct anther beak.

Oncidium sensu stricto:

"Onc. altissimum-Onc. baueri complex".

• Plants generally occur in warmer to hot areas at relatively low altitudes.

• General distribution in the Caribbean, northern South American coastline, to Central America, Mesoamerica and Mexico.

• Pseudobulbs generally flattened, elongate ovoid, bifoliate, plain green to brownish- green or yellowish.

• Ovary generally in a 90° angle between it and the column.

• Column generally (but not always) sharply angled away from the lip base.

• Pollinarium generally with a small and rounded, cushion-shaped and ventrally flat viscidium, positioned vertically so that the sticky side is clearly visible from a front view.

Oncidium:

Onc. cariniferum-Onc. maculatum complex.

• Plants of this loosely defined group appear to have evolved in Central America to Mexico and developed flowers that appear superficially similar to some of the Andean *Odontoglossum* species. This is probably the result of having developed similar pollination syndromes.

Heteranthocidium:

- Mainly upper elevation Andean species.
- Abortive flowers developing in various places along the inflorescence.
- Constricted column base.
- Sigmoid column.
- Commonly with pubescent patches on the column and/or lip base.
- Prominent column wings.
- Elongated and narrowing anther cap, beak, and a narrow stipe with a minute viscidium.

Vitekorchis:

- Upper elevation Andean species.
- Widely branched, pale bluish green, or "waxy-looking" panicles.
- Short and stout column with prominent wings.
- Minute stipe in relation to the pollinia, which has large caudicles.
- Lacking anther beak.

Petition to revert the transfer of *Odontoglossum* and *Sigmatostalix* to *Oncidium*:

Wesley Higgins' appearance at the May 2022 RHS – OHRAG meeting included presenting a petition signed by 190 Odontoglossum growers, from 18 countries, support to maintain *Odontoglossum* as a distinct genus. Out of deference for the varied privacy regulations of different nations the names of petitioner will not be published by the IOA; however, a summary of their nationalities follows:

Country	Number of						
	Supporters						
Australia	9						
Belgium	9						
Canada	2						
Colombia	42						
Costa Rica	1						
Ecuador	5						
France	1						
Germany	41						
Mexico	2						
New Zealand	3						
Peru	4						
Poland	1						
Spain	2						
Sweden	3						
Switzerland	1						
United Kingdom	13						
United States	49						
Venezuela	2						

Notes on names

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Odontoglossum or Oncidium

With an introduction by the Chairman, Johan Hermans, Mark Chase explains the decision made by the RHS Orchid Hybrid Registration Advisory Group on one of the most controversial questions in all plant taxonomy

Since the separation of the genus *Paphiopedilum* from *Cypripedium* at the end of the 19th century, no other issue of classification has divided the orchid community so much as the inclusion of most species of *Odontoglossum* in the genus *Oncidium*. This change was first published in *Genera Orchidacearum* by Mark Chase and colleagues in 2009 and was based on extensive genetic and morphological research. The most unfortunate and upsetting change was in the horticulturally important cool-growing species of the *Odontoglossum crispum-O. alexandrae* group becoming *Oncidium*.

Orchid nomenclature is governed by internationally agreed codes, but their classification is open to debate. The World Checklist of Selected Plant Families, facilitated by Royal Botanic Gardens, Kew, is generally seen as the baseline for currently recognized genera and species. The RHS Orchid Hybrid Register, administered by Julian Shaw and colleagues, is the International Registration Authority for orchid hybrids. Both databases are advised by international panels, with the Orchid Hybrid Registration Advisory Group (OHRAG) advising the RHS and the Registrar on all things related to orchid nomenclature. OHRAG was formed in 1961 and consists of 12 members and seven corresponding members from Australia, China, Costa Rica, Germany, Jamaica, Japan, Singapore, the UK and the US. OHRAG meets twice a year to consider, among other items, the impact and acceptability of any proposed changes in orchid nomenclature.

OHRAG was first made aware of the proposed changes in *Odontoglossum* and *Oncidium* in 2009, as

part of the deliberations arising after the publication of each volume of *Genera Orchidacearum*. OHRAG was conscious of a potential conflict with work by Stig Dalström and others, and opposition from coolgrowing Odontoglossum enthusiasts keen to retain a name widely used in horticulture. A deliberate decision was taken to introduce a cooling-off period to allow feedback, which was sought from individuals and special interest groups, including the International Odontoglossum Alliance. The RHS Nomenclature and Taxonomy Advisory Group (NATAG) was asked to independently investigate the issue and the German Orchid Society (DOG) sought advice from a taxonomist familiar with DNA phylogenetics.

Following this cooling-off period, discussion and consideration of all evidence, taking into account the advice from NATAG and DOG, it was recommended in 2018 to accept the interpretation by Chase *et al.* The Orchid Hybrid Register would be adjusted accordingly, with the proviso that further discussion would be needed after publication of the long-awaited monograph on *Odontoglossum* by Dalström *et al.* It was also recommended that the Orchid Hybrid Register should include all the Odontoglossum hybrid names as a record.

In 2020 the detailed monograph, "The Odontoglossum Story", by Dalström, Higgins & Deburghgraeve was published, and OHRAG reconsidered all the evidence. This included a petition by the authors of the book, plus a number of other supporters, to accept Odontoglossum and Sigmatostalix as distinct genera. OHRAG met in May this year, with Dr Higgins in attendance to present the petition. All members and guests declared any conflicting interest. They were then given the opportunity to present the case for or against accepting the interpretation by Dalström et al. or Chase et al. After careful consideration, an anonymous vote was held which, with, the exception of three abstentions, resulted in unanimous support for the interpretation of Chase et al. and this is the view that will continue to be reflected in the Orchid Hybrid Register. However, it is anticipated that the records of Odontoglossum and its hybrids currently hidden in the Register will be made visible in future upgrades so that everyone can search for their favourite genus.

What follows is Mark Chase's case for an expanded

Oncidium that OHRAG found convincing. It is published here in the interests of transparency and the desirability of establishing the prevalence of one view over another.

Unless compelling new evidence is published, OHRAG will not consider this issue again, and the hope is that the members of the International Odontoglossum Alliance and other growers and breeders will embrace the larger genus *Oncidium*. But, as it says on the back cover of the book, *The Odontoglossum Story* ...never ends...'.

Johan Hermans is Chairman of the RHS Orchid Hybrid Registration Advisory Group. Setting the scene



Views presented by the authors of "The *Odontoglossum* Story" (Koeltz, 2020) were considered by the Orchid Hybrid Registration Advisory Group.

In *The Odontoglossum Story* by Dalström *et al*, (2020) the authors summarize their position with the following statement: 'In conclusion, it is evident that the arguments presented by Chase *et al*, for transferring *Cochlioda*, *Collare-stuartense*, *Solenidiopsis*, *Symphyglossum* and *Sigmatostalix* into *Oncidium* are not only weak but also misleading and unconvincing. We therefore argue that a taxonomic restoration of the genus *Odontoglossum* in a slightly extended form is necessary and presents a more accurate and user-friendly classification.'

In this article I will address their accusation of misleading and unconvincing arguments, and assess their claim that their treatment of *Odontoglossum* is better because it is more accurate and user-friendly.

To set the timeframe over which this controversy has continued, the classification of subtribe Oncidiinae (Oncidium / Odontoglossum, Cvrtochilum, Brassia, Gomesa, Miltoniopsis, Miltonia etc.) was presented in full in volume 5 of Genera Orchidacearum by Chase (2009), The formal taxonomic changes were published in Orchids (Chase et al, 2008, Chase et al, 2009a), with the expansions of Gomesa published by Chase et al. (2009b) and Brassia and Pachyphyllum by Chase &Whitten (2011). Earlier molecular (DNA) research included higher-level studies of tribe Cymbidieae (including Oncidiinae) (Whitten et al. 2000), expansion of Cyrtochilum to include several groups of Odontoglossum sensu Bockemühl (Williams et al. 2001a, b) and chromosome number and genome size of Oncidiinae (Chase et al. 2005), The large- scale molecular analysis was published by Neubig et al. (2012), but many of the earlier studies cited here included DNA analyses, so the nature of the changes likely to be proposed in Genera Orchidacearum was known from the early2000s.

Purpose and principles

From the start of this controversy, Dalström and his supporters have stated that their goal was preservation of their 'pet' (favourite) genus. My colleagues and I started with no *a priori*



Figure 1. Floral diversity in the proposed expansion of Odontoglossum favoured by Dalström et al. (2020). Names provided reflect their generic placement prior to the DNA studies.

preferences, except to have as workable a system as possible. We believe that although you can evaluate the relationships of species and genera with DNA, taxonomy must be based on morphological characters so that you can recognize the genus to which a species belongs. If you encounter a species that you have never seen before, it is undesirable to have to sequence its DNA before you can assign it to a genus. Dalström *et al.* (2020) also agreed with this position.

Evolution presents us with complex scenarios that are wonderful subjects to study from a genetic standpoint but a nightmare from the taxonomic perspective. Floral morphology in subtribe *Oncidiinae* is clearly unreliable. '*Oncidium*' (yellow flowers with a lumpy lip callus) has evolved independently more than a dozen times (Papadopulos *et al.* 2013). Vegetative features fare much better – for example, in the two largest genera in subtribe *Oncidiinae*, *Cyrtochilum* has pseudobulbs round in cross-section, versus *Oncidium sensu* Chase *et al.* which are laterally flattened. If we emphasize vegetative features and largely ignore floral morphology, then we conclude that *Odontoglossum* is the same as *Oncidium* and the two should be merged.

Unfortunately, *Oncidium* is the older name, so it must be used for the combined genus. I suspect that if *Odontoglossum* was the older name, we would not be having this disagreement. This would mean that



no one, including Dalström *et al.*, opposes expansion of the genus, but rather it is the loss of a favorite name, *Odontoglossum*, that creates the problem. The international nomenclature committee that rules on taxonomic matters will not agree to conserve *Odontoglossum* because it is by far the smaller genus; more name changes are needed to move *Oncidium* into *Odontoglossum* than vice versa.

Cutting up a tree

My statements about the number of genera required to be recognized were claimed to be 'misleading' by Dalström *et al.* (2020). Their broadened circumscription of *Odontoglossum* indeed requires only a few new genera be recognized (*Heteranthocidium* and perhaps a couple of other smaller genera). However, this smaller number of changes than put forward by me is because they

'cut the DNA tree' far below the *Odontoglossum crispum*-type group – those species that most people identify as the core group of *Odontoglossum*. I was assuming that when Dalström said he wanted to keep *Odontoglossum* he meant just this core group.

However, to keep *Odontoglossum* in this sense (*Odontoglossum* subgenus *Odontoglossum* sensu Bockemühl (1989)) you would need to recognize several more genera, for example the *Odontoglossum astranthum*, *Symphyglossum* sanguineum, *Cochlioda rosea*, *Odontoglossum* tigroides, *Odontoglossum povedanum*, *Odontoglossum* chrysomorphum and *Odontoglossum* pictum clades (the last two with classic *Oncidium*-type flowers).

The Dalström *et al.* (2020) solution to the erection of many new genera is to include most of these morphologically different groups in *Odontoglossum* (Figure 1), making it much more diverse in terms of floral morphology than the remainder of *Oncidium*. This makes *Odontoglossum sensu* Dalström *et al.* a genus that is undiagnosable in floral and vegetative morphology (see further discussion below). My version of *Oncidium* is easily diagnosed: disregard (largely) the flowers and look at the pseudobulbs: they are members of *Oncidiinae* with laterally flattened pseudobulbs.

There are exceptions (*Cischweinfia* and some species of *Brassia*, *Miltonia*, *Miltoniopsis* and *Systeloglossum*), all of which differ in their floral morphology from any species in *Oncidium sensu* Chase, making them relatively easy to identify. I believe the statement of Dalström *et al.* (2020) that my opinion about more genera being required is taken out of the framework in which it was proposed: an assumption that *Odontoglossum sensu* Dalström *et al.* would be likely to include just the species of *Odontoglossum crispum* group. I had never considered that to 'save' the name *Odontoglossum*, Dalström *et al.* (2020) would include species with typical *Oncidium* morphology and a morphologically more diverse set of species than those in the remainder of *Oncidium*.

The claim that arguments for recognizing *Oncidium sensu* Chase are 'unconvincing' is based on the a priori belief that the name *Odontoglossum* must be saved. If you begin from this premise, then of course you will be unconvinced by my reasons for a broad concept of

Oncidium. Dalström *et al.* (2020) are clearly happy to include species with *Oncidium* morphology in their circumscription of *Odontoglossum*, but not the type species of *Oncidium* because that would set in motion the inclusion of *Odontoglossum* in *Oncidium*.

Friendly to whom?

Dalström *et al.* (2020) have claimed that their treatment of *Odontoglossum* is more 'accurate and userfriendly'. Did Dalström *et al.* (2020) provide any morphological distinctions in the section on how to distinguish *Oncidium* and *Odontoglossum*? Dalström *et al.* (2020) do not mention a single character that consistently differs in the species they wish to circumscribe as *Odontoglossum* from those in *Oncid*- *ium*. They mention many features (e.g., lip-column angles, purple-spotting, glossy pseudobulbs, shape of pollinaria) that distinguish groups within *Odonto-glossum sensu* Dalström *et al.*, but if you go through that section carefully, it is full of generalities and many exceptions. In *Odontoglossum sensu* Dalström *et al.* there is greater morphological diversity than in the reminder of *Oncidium* that they exclude (Figure 1). *Odontoglossum sensu* Dalström *et al.* is a morphological hodge-podge no less diverse than *Oncidium sensu* Chase et al. Furthermore, *Odontoglossum sensu* sensu Dalström *et al.* is neither clearly defined nor morphologically consistent, and they cannot tell a novice how to tell these two genera apart.

Dalström et al. (2020) stated that once you know



the group well, you can tell which species belong to Oncidium and which to Odontoglossum. If an unknown plant turns up on the show bench, how would Dalström et al. decide whether it is a species of Oncidium or Odontoglossum? First, they determine which species it is (and Dalström knows the species very well), and then they know if it is an Oncidium sensu Dalstrom et al. or Odontoglossum sensu Dalström et al. As they stated, if you know the group well enough, then you can figure out in which genus a known species belongs, but how would they figure out in which genus should go a new species with floral morphology like those in *Heteranthocidium*? It would be impossible without doing DNA work. If we are to have messy genera, then fewer, larger messy genera are preferable to many smaller, messy genera. Actually, Oncidium sensu Chase et al. is not so messy, and it is identifiable based on its habit (single-noded, ancipitous pseudobulbs).

I have consistently favoured broader generic circumscriptions: Cyrtochilum (which Dalström happily supported), Brassia, Calanthe, Cattleya, Coelogyne, Comparettia, Gomesa, Maxillaria and Miltonia, and others have proposed broadly circumscribed Epidendrum, Phalaenopsis and Vanda etc. Dalström et al. appear to think that if they produce a book laying out this version of *Odontoglossum*, then it makes it convincing. However, when I look at what they have done, which is a great contribution at the species level, The Odontoglossum Story demonstrates clearly why this approach is such a failure. You can keep the name Odontoglossum, but this circumscription of the genus is so diverse that there is no way to morphologically separate it from the rest of the Oncidium species Dalström et al. artificially exclude.

Mark Chase was formerly head of the Molecular Systematics Section and Keeper of the Jodrell Laboratory at the Royal Botanic Garden, Kew. He is now retired but continues to work on several research projects as an Honorary Research Associate at RBG, Kew.

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Opinion from Stig Dalström on

"Odontoglossum or Oncidium?"

Editor's note

In our October issue "Die Orchidee" 73(5), 2022, pp. 394-399, we published (in translation) under the title "Odontoglossum or Oncidium" a publication that appeared in the September issue of "The Orchid Review". with an introduction by OHRAG Chairman Johan Hermans and comments by Mark Chase on the decision of the Hybrid Registration Advisory Group (OHRAG) of the Royal Horticultural Society (RHS), Kew to maintain the transfer of most Odontoglossum species to the genus Oncidium rejecting the proposal submitted to RHS by the authors of "The Odontoglossum Story", Stig Dalstrom, Wesley E. Higgins and Guido Deburghgraeve. We received a "Letter to the Editors" from Stig Dalström on November 15, 2022 with his statement on Mark Chase's statements, the original of which we will inform our readers of below.

A letter to the Editors of AOS "Orchids", D.O.G. "Die Orchidee", and "The Orchid Review", concerning a response to the article Notes on Names (2022).

Dear Editor,

In an article published in AOS "Orchids" 92(9), "Die Orchidee" 73(5), and "The Orchid Review" (Sep. 2022), the Royal Horticultural Society's Chairman of the RHS Orchid Registration Advisory Group, Johan Hermans, and Honorary Research Associate at the Royal Botanical Garden at Kew, Mark Chase explain why they decided to reject the proposal submitted to the RHS by the authors of "The Odontoglossum Story" (Dalström, Higgins, Deburghgraeve, 2020) (which was supported by nearly 200 orchid growers and scientists from 18 countries), to re-instate primarily Odontoglossum and Sigmatostalix as valid genera. The decision to reject the proposal was made during a RHS meeting in London in May of 2022. The previously long-term held position in this debate by primarily Chase, made the outcome of the meeting disappointing but hardly unexpected. In the 2022 article Chase also discusses the arguments

for and against the taxonomic transfer and in doing so challenges the authors of the recently published scientific treatment of the genus *Odontoglossum* (Dalström *et al.*, 2020). It is therefore proper to clarify some facts and respond to Chase's reasoning.

First of all, some of the arguments that were stated by Dalström et al. (2020), against the transfer of genera Chamaeleorchis, Cochlioda. Collare-stuartense. Heteranthocidium, Odontoglossum, Sigmatostalix and Solenidiopsis into Oncidium need to be repeated and explained here. The easiest and most accurate way to present some of these arguments is to quote them as they were published (Dalström et al., 2020). But before these arguments are presented, we should remember that the transfers were made before any scientific data or supporting evidence was officially published (Chase et al., 2008). This effectively prevented any meaningful or objective (and potentially obstructive) debate regarding the value of the data and the necessity of this significantly controversial nomenclatural change.

Chase et al., state:

"If *Odontoglossum* is to be maintained as a distinct genus, then many more genera will need to be created or some long-known species with typical *Oncidium* floral morphology (e.g., *O. chrysomorphum* Lindl., *O. obryzatum* Rchb. f.) will have to be transferred into *Odontoglossum*, which removes any hope of morphological distinctiveness for *Odontoglossum*." (Chase *et al.*, 2008).

The response to this statement was published by Dalström et al., (2020) and was intended as a reassurance that no additional new genera were needed, in accordance with what was interpreted at the time as the desired sentiment of Chase. Dalström et al., agree that it is better to limit the creation of new genera in order to maintain as much taxonomic stability as possible. The complexity of reality, however, makes it difficult to handle taxonomical issues in such a way that everybody, from novices to learned professors, can readily understand each and every situation. Chase et al., (2022), argue that "single-noded, ancipitous pseudobulbs" is enough to distinguish a true "Oncidium", (except for all the genera where this is not the case, some of which, but not all, are listed by Chase and discussed below). Dalström et al.,

do agree that vegetative features can be very useful, but only in combination with additional features, such as floral morphology, geographical, ecological and any other supportive data. This combination can create distinct profiles for both species and genera. In the case of the "*chrysomorphum*" and "*obryzatum*" clades we have analyzed the vegetative features closely and discovered that they possess distinctive and consistent vegetative features, such as unifoliate and purple mottled pseudobulbs, which are both easy to recognize and useable as identifiable features. These features also correspond well with those seen in more typical *Odontoglossum* species. We therefore included the following paragraph in our book:

"No additional new names are needed to maintain *Odontoglossum* as a distinct genus once the florally *Oncidium*- looking but vegetatively *Odontoglossum*looking *'chrysomorphum'* and *'obryzatum'* [= *Odm. pictum* (Kunth) Dalström & W. E. Higgins], complexes were transferred into *Odontoglossum* (Dalström & Higgins, 2016). This is clearly a more conservative and stabilizing alternative than lumping everything into *Oncidium*, which will effectively eliminate any possibility to distinguish it as a genus." (Dalström *et al.*, 2020).

In other words: We believe that "single-noded, ancipitous pseudobulbs" is a weak and insufficient feature to distinguish a genus in the Oncidiinae.

Chase et al., state:

"After these changes [the removal of many *Cyrtochilum* species from *Odontoglossum* by Dalström (2001a)], there still remains a core group of *Odontoglossum* species that DNA studies have indicated are monophyletic, but these are deeply embedded in *Oncidium*." (Chase *et al.*, 2008).

Dalström et al., response:

"By studying the '...single maximum likelihood tree resulting from analysis of the combined five-region data set for 736 individuals' [Fig. 8 in Neubig *et al.* 2012]. 'We can see that an extended *Odontoglossum* is not actually 'deeply embedded' in *Oncidium* at all, but a monophyletic sister-group to *Sigmatostalix*, and these two genera together form a monophyletic sister-group to *Oncidium* (*sensu stricto*), even when the latter includes other distinguishable and

monophyletic groups that have been described as separate genera, such as *Heteranthocidium* Szlach., Mytnik & Romowicz, *Chamaeleorchis* Senghas & Lückel." (Dalström *et al.*, 2020).

In other words: We consider the above Chase *et al.*, statement to be misleading.

Chase et al., statement:

"In addition, *Cochlioda* Lindl. and *Symphyglossum* [as "*Symphyloglossum*"] Schltr., are hummingbird-pollinated species of *Oncidium* and also deeply imbedded in *Oncidium/Odontoglossum*, so these too are transferred." (Chase *et al.*, 2008).

Dalström et al., response:

Symphyglossum sanguineum (Rchb. f.) Schltr., as the sole species from that genus was transferred to Odontoglossum in 2001 based on molecular evidence and morphologic features and is not deeply embedded in Oncidium (sensu stricto). It is, however, deeply embedded in the monophyletic and extended Odontoglossum (Dalström 2001b, 2012; Dalström & Higgins, 2016). The other former Symphyglossum species; S. distans (Rchb. f.) Garay & Dunsterv., and S. umbrosum (Rchb. f.) Garay & Dunsterv., belong in Cyrtochilum (Dalström, 2001a). Whether Odm. sanguineum is hummingbird pollinated or not is probably pure speculation. We are not aware of any scientific documentation for this phenomenon" (Dalström et al. 2020).

Neubig, Chase et al., statement:

"We feel that it is better to use vegetative features in combination with few floral traits to define broader genera.. *Oncidium* is perhaps the best example of our contention that floral morphology must be foregone in Oncidiinae as a basis for generic Characters.. Floral traits in Oncidiinae are highly plastic and reflect evolutionary shifts in pollinators." (Neubig, Chase *et al.*, 2012)" (Dalström *et al.* 2020).

Dalström et al., response:

"Odontoglossum is a distinct and monophyletic genus even when it includes the florally *Oncidium*looking but vegetatively *Odontoglossum*-looking *chrysomorphum*' and *'pictum*' complexes. What DNA research has taught us is that flower morphology is not entirely reliable as the sole basis for taxonomic decisions, but vegetative features are, particularly when combined with molecular evidence, flower morphology and any other available traits." (Dalström *et al.*, 2020).

These above mentioned arguments for the taxonomic transfer of Odontoglossum and other genera into Oncidium by Chase et al., and Neubig et al., are considered by the authors of "The Odontoglossum Story" to be "weak but also misleading and unconvincing" (Dalström et al., 2020). In addition to this, there are other factors that strengthen our opinion. Several species that belong in Cyrtochilum; "Odm." contay-pacchaense D. E. Benn. & Christenson, "Odm." machupicchuense D. E. Benn. & Christenson, "Odm." pseudomelanthes D. E. Benn. & Christenson and "Odm." rubrocallosum D. E. Benn. & Christenson were also transferred to Oncidium, which reveals a lack of knowledge about these particular species and is therefore obviously misleading. The latter two of these have since been transferred to Cyrtochilum, but the former two are still kept as "Oncidium" species by Kew (WCSP; Oct. 16, 2022). This is incorrect and suggests that no DNA sequencing was ever made before the transfer, and illustrates another example of misleading information.

Then we come to the voucher specimens, which should be preserved for verification of the correctly identified samples. In order to do this I was kindly invited by Norris Williams and Mark Whitten to examine the specimens deposited in the herbarium of the Museum of Natural History in Gainesville, Florida (FLAS). Many of the sampled specimens were present and correctly identified, but some were not. For example:

N140 as "epidendroides" = Odm. subuligerum.

N165 as "*chrysomorphum*" was sequenced from a leaf only, and no flowers had been seen.

N178 as "sp." was not found. Probably destroyed in the process.

N215 as "*hauensteinii*" was sequenced from a leaf only.

N639 as "*obryzatoides*" was not found. Probably destroyed in the process.

W1676 and W2421 as "cf. *schmidtianum*" (which is a "true" *Oncidium*) = *Odm. tipuloides* (*sensu* Dalström *et al.*, 2020). W1767 as "lehmannii" = Odm. praenitens.W2391 as "cirrhosum" = Odm. crinitum.B2529 as "hallii" = Odm. paniculatum.

Very few specimens of other involved genera were examined due to a lack of time, and no examinations of the specimens deposited at Kew have been performed to date.

These examples of specimens that are (were) available for examination is why the cladogram on which the transfer by Chase *et al.*, is based, is considered by us to be useful as a guideline but questionable and "misleading" as scientific evidence. In addition, the drawing in "Genera Orchidacearum" **5**(2), fig. 529.3, p. 311 is labeled "*Oncidium naevium*" (Chase, Pridgeon *et al.* 2009) but shows an *Odontoglossum crocidipterum*. The color photo 119 is labeled *Oncidium cirrhosum*" but shows an *Odontoglossum crinitum* (the *Odm. popayanense* form). These and other mistakes could have been easily avoided if verification had been asked for by somebody who is more familiar with these orchids.

Mark Chase states (2022):

"From the start of this controversy, Dalström and his supporters have stated that their goal was preservation of their 'pet' (favourite) genus."

The concept of having a "pet" genus originates in a discussion between a very trustworthy colleague and none other than Mark Chase, who reportedly used this word to describe my scientific focus on this complex genus. That is why this word was used in quotes in Dalström *et al.* (2020) and in an ironical sense, which apparently can be difficult to comprehend.

Chase states (2022):

If we emphasize vegetative features and largely ignore floral morphology, then we conclude that *Odontoglossum* is the same as *Oncidium* and the two should be merged."

By analyzing the molecular based cladogram produced by Chase *et al.* (2009), we can see that *Odontoglossum* and *Oncidium* are not the same. They are members of separate clades, which suggest separate evolutionary paths. The above conclusion

by Chase is over-simplified and ignores that fact that many other and more distantly related genera also have "single-noded, ancipitous pseudobulbs" and would therefore have to be included in a "Mega-*Oncidium*" as well. To define a genus in Oncidiinae based on this single feature is weak, misleading and not particularly useful.

Chase states (2022):

"Unfortunately, *Oncidium* is the older name, so it must be used for the combined genus. I suspect that if *Odontoglossum* was the older name, we would not be having this disagreement. This would mean that no one, including Dalström *et al.*, opposes expansion of the genus, but rather it is the loss of a favourite name, *Odontoglossum*, that creates the problem."

This statement by Chase is an example of a completely wrong conclusion about what the "controversial" debate is all about, and reveals more of Chase's bias than anything else. The authors of "The *Odontoglossum* Story" have made a lot of efforts to make it clear that *Odontoglossum* and *Sigmatostalix* in particular, but also *Heteranthocidium* and potentially *Chamaeleorchis* should be treated as taxonomically distinct genera and separate from *Oncidium sensu strictu*. Why would we then want to sink *Oncidium* into *Odontoglossum*? That has never been on our agenda and would be in opposition to our goal!

Chase states (2022):

"I was assuming that when Dalström said he wanted to keep *Odontoglossum* he meant just this core group [when, and to whom did I say this?]."

Chase refers here to his assumption that I "meant" that *Odontoglossum* should only include "the *Odontoglossum crispum* type group". No such statement has been expressed by Dalström *et al.*, (2020).

Chase states (2022):

"The Dalström *et al.*, (2020) solution to the erection of many new genera is to include most of these morphologically different groups in *Odontoglossum* (Figure 1), making it much more diverse in terms of floral morphology than the remainder of *Oncidium*."

Chase refers here to the members of genera Cochlioda

and Collare-stuartense, and also Symphyglossum sanguineum and Odontoglossum povedanum, which all have been included in Odontoglossum by Dalström et al. (2020), based on molecular "evidence" produced by Chase et al. Chase then tries to demonstrate with photographs of flowers representing these groups, how diverse the floral morphology is, forgetting that he is a strong advocate for ignoring floral features altogether in Oncidiinae taxonomy. If Chase had shown photographs of the vegetative parts of the species featured in "Figure 1", he would see how similar they really are. Chase seems to have problems with the floral diversity in Odontoglossum sensu lato, but forgets to mention that if Odontoglossum and Sigmatostalix were treated as oncidiums, then the floral diversity in Oncidium would be even greater.

Chase states (2022):

"My version of *Oncidium* is easily diagnosed: disregard (largely) the flowers and look at the pseudobulbs: they [referring here to the taxa included in the former paragraph] are members of Oncidiinae with laterally flattened pseudobulbs. There are exceptions (*Cischweinfia* and some species of *Brassia*, *Miltonia*, *Miltoniopsis* and *Systeloglossum*), all of which differ in their floral morphology from any species in *Oncidium sensu* Chase, making them relatively easy to identify."

There are other genera with laterally flattened pseudobulbs, such as *Gomesa* (including all the Brazilian taxa that it includes, according to Chase *et al.*), *Otoglossum*, *Quitlauzina*, *Rhynchostele*, *Rossioglossum*, *Solenidium*, *Trichopilia*, *Vitekorchis etc.* This creates a rather confusing situation where we sometimes should rely on flattened pseudobulbs only, except in the many cases where we have to rely on floral morphology, or the country where they occur, as for *Gomesa*:

"Gomesa s.l. is in general easily diagnosed by the synsepal (fused lateral sepals), but in a few cases these appear to have become secondarily free, rendering that character inapplicable, but then these species can be diagnosed by their Brazilian distribution and otherwise similar floral traits and habits..." (Chase *et al.* 2009).

A fused synsepal is found in several other Oncidiinae

genera, and using the country of origin, or in this case the continent of origin, as a distinguishing feature for a genus is a rather weak solution, unless it is combined with floral and vegetative as well as other geographical and ecological features etc., which is something Dalström *et al.*, favor. So basically Chase *et al.*, also favor a combination of features to distinguish genera in Oncidiinae, and not just the shape of the pseudobulb. This means that Chase *et al.*, in fact must recognize that this single feature is not only inconsistent, but also "weak, unconvincing and misleading".

Chase states (2022):

"I had never considered that to 'save' the name *Odontoglossum*, Dalström *et al.*,(2020) would include species with typical *Oncidium* morphology and a morphologically more diverse set of species than those in the remainder of *Oncidium*."

The molecular work by Chase et al. (2009, 2012), shows that the chrysomorphum and the pictum complexes are more closely related to Odontoglossum sensu stricto, than to Oncidium sensu stricto. This had been suspected for some time by us, but it was useful to have it verified by the molecular guideline provided by Chase et al. It did create a tricky situation though, regarding how to treat them. They could have been placed in one new polyphyletic, or two new monophyletic genera near the base of the Odontoglossum sensu lato branch in the DNA cladogram. That would have solved some issues, but create others. We don't want to encourage the creation of polyphyletic genera so that option was discarded. But the problems with accepting these groups as separate new genera would be worse than to sink them into Odontoglossum sensu lato, we believe. Odontoglossum (former Oncidium) pictum belongs in one clade, while the virtually identical Odontoglossum (former Oncidium) tipuloides belongs in the other. It seems meaningless to us to treat these two species as belonging to separate genera, so we decided to add them to Odontoglossum and place them in a separate section with two series instead. This may not be a perfect solution but the alternatives were less appealing. We also have to remember that the rather easily recognized genus Sigmatostalix is evolutionary "caught in between" Odontoglossum

sensu lato and *Oncidium sensu stricto*. This suggests that there is a definite molecular and evolutionary gap between *Odontoglossum sensu lato* and *Oncidium sensu stricto* and that these clades evolve in separate directions.

Chase states (2022):

"The claim that arguments for recognizing *Oncidium* sensu Chase are 'unconvincing' is based on the *a* priori belief that the name *Odontoglossum* must be saved."

The "controversial" debate is not about preserving a name, but to accept genera Odontoglossum Sigmatostalix, and preferably and at least Heteranthocidium and potentially Chamaeleorchis as generically distinct from Oncidium. This is based on strict scientific arguments and conclusions. This said, however, we do believe that from a horticultural historic point of view, there would be a good reason to preserve the name "Odontoglossum" since these particular species (and not Oncidium sensu stricto species), have played such a flamboyant role in particularly the European horticultural history. But the various Royal Horticultural Society committees obviously disagree on that. It is somewhat surprising though that the RHS does not have an interest in conserving such a significant chapter of their legacy when the possibility is readily available.

Chase states (2022):

Dalström *et al.* (2020) are clearly happy to include species with *Oncidium* morphology in their circumscription of *Odontoglossum*, but not the type species of *Oncidium* because that would set in motion the inclusion of *Odontoglossum* in *Oncidium*."

Dalström *et al.* (2020) have not expressed any particular happiness over including species with *Oncidium* morphology (flowers) in *Odontoglossum*. On the contrary, the rather "inconvenient" position of the *chrysomorphum* and *pictum* clades (once the correct identifications of the sampled voucher specimens were confirmed), caused some consternation about how to treat them. Fortunately, some distinct vegetative features could be defined that help distinguishing this group. And as Chase *et al.*, so willingly declare: "Floral morphology has to

be forgone in Oncidiinae because it is highly plastic and subject to shift in pollinators" (Chase, Pridgeon *et al.*, 2009).

Chase states (2022):

Did Dalström *et al.*, (2020) provide any morphological distinctions in the section on how to distinguish *Oncidium* and *Odontoglossum*? Dalström *et al.*, (2020) do not mention a single character that consistently differs in the species they wish to circumscribe as *Odontoglossum* from those in *Oncidium*."

Mark Chase must be well aware of the fact that single features that consistently distinguish genera in Oncidiinae are virtually non-existent. That is why we use combinations of features, like what Chase *et al.*, use for *Cyrtochiloides*, *Cyrtochilum*, *Gomesa* and many other genera. Yes, there are generalities and exceptions because that is what evolution does for us. This is part of reality and we have to deal with it the best we can. We can also mention here that the orchid family is not defined by a single distinguishing feature, but by a combination of features. Most, if not all of these features can be found in other families but the combination makes Orchidaceae unique.

Chase states (2022):

"Furthermore, *Odontoglossum sensu* Dalström *et al.*, is neither clearly defined nor morphologically consistent, and they cannot tell a novice how to tell these two genera apart."

We do not consider Chase to be a novice, but we do argue that *Odontoglossum sensu* Dalström *et al.*, is better defined than *Oncidium sensu* Chase. To rely on "single-noded, ancipitous pseudobulbs" as a single definition of a genus in Oncidiinae appears remarkably naive. There are too many exceptions to this overly-simplified concept for it to be realistic. The vegetative features for plants in *Odontoglossum* are remarkably consistent, as described in Dalström *et al.* (2020), but the vegetative features need to be combined with several other sets of features for the genus to be distinctly recognized, just as Chase *et al.*, suggests for *Gomesa* and other genera.

Chase states (2022):

Dalström et al., appear to think that if they produce

a book laying out this version of *Odontoglossum*, then it makes it convincing. However, when I look at what they have done, which is a great contribution at the species level, "The *Odontoglossum* Story" demonstrates clearly why this approach is such a failure."

It seems logical to us that Chase considers our treatment of Odontoglossum to be a failure. It doesn't cohere with his opinion! We argue, on the other hand, that our book is a great success based on the reception it has received from many growers and experienced taxonomists around the world. And that is what matters to us! The size, weight and prize may not be particularly "user-friendly", but the contents are. The various chapters of systematic and taxonomic discussions, the illustrated keys and detailed descriptions of every known species, combined with analytical drawings, distribution maps and lots of color photographs should be helpful to anybody who wants to learn more about this remarkable group of plants. It also constitutes a great tool for any novice or learned professor to get familiarized with this historically and horticultural significant orchid genus.

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Parting Shots

The following photos have been submitted by readers for your viewing pleasure. Anyone can submit photos to share with others. They can be sent as an email attachment to: jjleathers@comcast.net



Oda. Shonan Pinky 'Royal Red' Robert Culver Normandy Park, Washington, USA



Wils. Matoaka Road Robert Culver Normandy Park, Washington, USA



Oda. St. Wood 'Hawk Hill' Robert Culver Normandy Park, Washington, USA



Oda.(Prince Vultan x Florence Stirling 'Hawk Hill') Tim Brydon San Francisco, California, USA



Oda.(Mem Kendrick Williams x Florence Stirling) Tim Brydon San Francisco, California, USA



Oda. Nicky Nicky 'Nova' Robert Culver Normandy Park, Washington, USA



Oda. (Pat Hill x Prince Vultan) Tim Brydon San Francisco, California, USA



Cda. noezliana Robert Culver Normandy Park, Washington, USA



Odcdm. Tiger Hambuhren Tim Brydon San Francisco, California, USA



Oda (Holiday Gold x Eric's Parade) Tim Brydon San Francisco, California, USA



Odm. crispum 'Royale' Tim Brydon San Francisco, California, USA



Odm. Pesky Trance 'Ken Girard' Tim Brydon San Francisco, California, USA



Oda. Joe's Drum F3 '#509' Tim Brydon San Francisco, California, USA



Oda. (Tipples x St Clement) Robert Hamilton Berkeley, California, USA

Orchid Hybrid Registration

The following pages contain a printout derived from the fields of a the Odontoglossum hybrid registration system, <u>wikiregistration.com</u>. This database is the creation of Robert Culver, an IOAJ contributor. Currently, it is specific to Odontoglossum-containing hybrids. It uses historic naming conventions begun by Frederick K. Sander in <u>Sander's Complete List of Orchid Hybrids</u>. By retaining classic genera names, most used for more than a century, continuity and lineage searches remain tenable. New registrations via wikiregistrations will be published in future issues of this journal with complete data available at: https://wikiregistration.com/

IOAJ readers who want to register hybrids via wikiregistrations will find instructions on the website: <u>https://wikiregistration.com/</u>. There are no registration fees. Implicit with any registration is the granting of permission for anyone who wants to register a hybrid with RHS as long as the wikiregistration hybrid information is appropriately retained.

Note: wikiregistrations.com forwards registrations to the RHS. The RHS checks and cross-registers them in their database to ensure that they are not inadvertently registered under a different name which would result in confusion. Only a single registration is necessary to register a grex (cross).

Name		Parent	age	Registered By			
ALEXANDERARA	Joe's Pagan	McIna.	Pagan Lovesong	×	Oda.	Joe's Drum	Juan Posada - Colomborquideas
	No Serenade	McIna.	Serenade	×	Oda.	Castle de Noez	Andrew Easton - New Horizons Orchids
BURRAGEARA	Hot Poker	Burr.	Living Fire	×	Cda.	noezliana	Andrew Easton - New Horizons Orchids
CHINKOVSKYARA	Wild Gerardus	Grd.	Golden Emperor	×	Oda.	Wilda Bullard	Andrew Easton - New Horizons Orchids
COLMANARA	Catatonic Trance	Colm.	Catatante	×	Odm.	Pesky Trance	Andrew Easton - New Horizons Orchids
CYRTODONTIODA	Gangly	Oda.	Shelley	×	Cyr.	leopoldianum	Robert Hamilton - Hawk Hill Labs
CYRTOGLOSSUM	Long Shot	Cyr.	edwardii	×	Odm.	Nicky Strauss	Robert Hamilton - Hawk Hill Labs
MILTONIOPSIS	Black Merriman	Mps.	Blackberry Cream	×	Mps.	Merriman	Juan Felipe Posada - Colomborquideas
	Bob Sabourin	Mps.	Bob Hoffman	×	Mps.	Jean Sabourin	Juan Felipe Posada - Colomborquideas
	Bob Tide	Mps.	Bob Hoffman	×	Mps.	Red Tide	Juan Felipe Posada - Colomborquideas
	Bremen Village	Mps.	Bremen	×	Mps.	Aurora Village	Juan Felipe Posada - Colomborquideas
	Dear Surprise	Mps.	Dearest	×	Mps.	Saffron Surprise	Juan Felipe Posada - Colomborquideas
	Dear Yarrow	Mps.	Dearest	×	Mps.	Yarrow Bay	Juan Felipe Posada - Colomborquideas
	Don Hull	Mps.	Don Herman	×	Mps.	Milla Hull	Juan Felipe Posada - Colomborquideas
	Don Kabuki	Mps.	Chieri Kabuki	×	Mps.	Don Herman	Juan Felipe Posada - Colomborquideas
	Duncan Waterfall	Mps.	Rustic Waterfall	×	Mps.	Duncan York	Juan Felipe Posada - Colomborquideas
	Echo Kabuki	Mps.	Echo Bay	×	Mps.	Chieri Kabuki	Juan Felipe Posada - Colomborquideas
	Eleanor Marie	Mps.	Rose Carpenter	×	Mps.	Bleuana	Robert Culver
	El Retiro	Mps.	Brigadier	×	Mps.	Donald Feinstein	Juan Felipe Posada - Colomborquideas
	Funny Don	Mps.	Don Herman	×	Mps.	Funny Face	Juan Felipe Posada - Colomborquideas
	Leo Mark	Mps.	bismarckii	×	Mps.	Leo Holguin	Juan Felipe Posada - Colomborquideas
	Lorene Hull	Mps.	Lorene	×	Mps.	Milla Hull	Juan Felipe Posada - Colomborquideas
	Melissa Falls	Mps.	Melissa Baker	×	Mps.	Newton Falls	Juan Felipe Posada - Colomborquideas
	Mont Andy	Mps.	Mont Mado	×	Mps.	Andy Easton	Juan Felipe Posada - Colomborquideas
	Mount Phal	Mps.	Mount Baker	×	Mps.	phalaenopsis	Juan Felipe Posada - Colomborquideas
	Primavera Radiante	Mps.	Eva's Dulce de Limón	×	Mps.	Sunsprite	Juan Felipe Posada - Colomborquideas
	Robert Black	Mps.	Robert Paterson	×	Mps.	J. M. Black	Juan Felipe Posada - Colomborquideas
	Roez Dream	Mps.	Daydream	×	Mps.	roezlii	Juan Felipe Posada - Colomborquideas
	Saffron Bay	Mps.	Yarrow Bay	×	Mps.	Saffron Surprise	Juan Felipe Posada - Colomborquideas
	Second Arthur	Mps.	Second Love	×	Mps.	Arthur Cobbledick	Juan Felipe Posada - Colomborquideas
	Serenidad	Mps.	Avranches	×	Mps.	Lycaena	Juan Felipe Posada - Colomborquideas
	Strawberry Baker	Mps.	Beall's Strawberry Joy	×	Mps.	Melissa Baker	Juan Felipe Posada - Colomborquideas
	Sumas Tide	Mps.	Sumas	×	Mps.	Red Tide	Juan Felipe Posada - Colomborquideas
	Vexifalls	Mps.	vexillaria	×	Mps.	Rainbow Falls	Juan Felipe Posada - Colomborquideas
	Yarrow Dream	Mps.	Daydream	×	Mps.	Yarrow Bay	Juan Felipe Posada - Colomborquideas
	Yarrow Dumas	Mps.	Yarrow Bay	×	Mps.	Alexandre Dumas	Juan Felipe Posada - Colomborquideas
ODONCHLOPSIS	Ozymandias	Oda.	Shelley	×	Mps.	Venus	Robert Culver
ODONTIODA	Anne Brydon	Oda.	Tiffany	×	Oda.	Joe's Drum	Tim Brydon
	Aurelio	Odm.	Extraria	×	Oda.	George McMahon	Robert Hamilton - Hawk Hill Labs
	Avranches Gold	Oda.	Aurelio	×	Oda.	Avranches	Robert Hamilton - Hawk Hill Labs
	Bahia Rosada	Odm.	crispum	×	Oda.	Bahia Blanca	Juan Felipe Posada - Colomborquideas
	Betty Whiteout	Oda.	Trish	×	Oda.	Santander	Robert Culver
	Blip	Oda.	Prince Vultan	×	Oda.	Burning Bed	Robert Hamilton - Hawk Hill Labs
	Brian Rittershausen	Odm.	Tribbles	×	Oda.	Nichirei Beaugo	Robert Hamilton - Hawk Hill Labs
	Carabasin	Odm.	Yellowstone Basin	×	Oda.	Caradec	Juan Felipe Posada - Colomborquideas
	Carlos Arango	Oda.	Shelley	×	Odm.	Jim Mintsiveris	Andrew Easton - New Horizons Orchids

Name		Parent	age	Registered By			
ODONTIODA (cont.)	Castle Shelley	Oda.	Shelley	×	Oda.	Castle de Stro	Robert Hamilton - Hawk Hill Labs
	Christine Jorgensen	Oda.	Murray River	×	Odm.	Hildesheim	Robert Hamilton - Hawk Hill Labs
	Concordia	Odm.	Hallio-Crispum	×	Oda.	Charlesworthii	Juan Felipe Posada - Colomborguideas
	Crystal Prism	Oda.	Prism	×	Oda.	Crystal Palace	Robert Culver
	Crystal Vale	Oda.	McLaren Vale	×	Oda.	Crystal Palace	Robert Culver
	Destello Purpura	Oda.	Stromar	×	Oda.	Sunset Jaguar	Juan Felipe Posada - Colomborguideas
	Devon Hill	Oda.	Devon Flash	×	Oda.	Patricia Hill	Juan Felipe Posada - Colomborguideas
	Diablo Tiff	Oda.	Diablo	×	Oda.	Tiffany	Juan Felipe Posada - Colomborguideas
	Doctor Ilene Weitz	Oda.	Le Marais	×	Oda.	Saint Clement	Howard Liebman
	Donegal	Oda.	Tipples	×	Oda.	Saint Clement	Robert Hamilton - Hawk Hill Labs
	Drummer Levsa	Oda	Drummer Harry	×	Oda	Levsa	Juan Felipe Posada - Colomborquideas
	Entranced	Odm	Pesky Trance	×	Oda	Joe's Drum	Robert Hamilton - Hawk Hill Labs
	Eric's Golden Holiday	Odm	Holiday Gold	×	Oda.	Fric's Parade	Robert Hamilton - Hawk Hill Labs
	Fractal	Oda	Prince Vultan	×	Oda.	Zena	Robert Hamilton - Hawk Hill Labs
	Fuchsia	Oda.	McLaren Vale	×	Oda. Oda	Desirable	Robert Culver
	Gâteau Brûlé	Odm.	Nancy Crees	×	Oda.	Rawdon on Fire	Tyler Albrecht
	Gene Capel	Oda	Mont Canel	×	Oda.	Gene Gettel	luan Feline Posada - Colomborquideas
		Oda.		Ŷ	Oda. Oda	George McMahon	Juan Felipe Posada - Colomborquideas
	George Villago	Oda.	Coorgo McMahan	Ĵ	Oda.	Vietoria Villago	Juan Folino Posada - Colomborquideas
		Oua.		Ê	Oua.	Coorgo MoMohon	Juan Felipe Posada - Colomborquideas
	Golden George	Oam.	Golden Crisp	×	Oda.		Juan Felipe Posada - Colomborquideas
	Great Exposition	Oda.	Floresca	×	Oda.	Crystal Palace	Robert Hamilton - Hawk Hill Labs
	Haifa Harry	Odm.	Crispo-Harryanum	×	Oda.	Jaffa	Andrew Easton - New Horizons Orchids
	Harry Topa	Odm.	harryanum	×	Oda.	Тора	Juan Felipe Posada - Colomborquideas
	Heresy	Oda.	Saint Clement	×	Odm.	pescatorei	Robert Hamilton - Hawk Hill Labs
	Hot Trickle	Oda.	Tricolore	×	Cda.	noezliana	Andrew Easton - New Horizons Orchids
	Ingmar Queen	Oda.	Ingmar	×	Oda.	Queen River	Robert Hamilton - Hawk Hill Labs
	Inriver	Oda.	Ingera	×	Oda.	Queen River	Robert Hamilton - Hawk Hill Labs
	Jesridae	Oda.	Eridae	×	Oda.	Jessmia	Juan Felipe Posada - Colomborguideas
	Jim's Desire	Oda.	Desirable	×	Odm.	Jim Mintsiveris	Robert Culver
	Levsa Rolf	Odm	Rolfeae	×	Oda	Levsa	Juan Felipe Posada - Colomborquideas
	Lightening	Oda	Rive Velvet	×	Oda.	Crystal Palace	Robert Hamilton - Hawk Hill Labs
		Oda.	Little Big Man	×	Oda.	Gene Gettel	Juan Feline Posada - Colomborquideas
		Oda.	Shellov	Ŷ	Oda. Oda	Haniesnin	Robert Hamilton - Hawk Hill Labs
	Maripata	Oda.	Avranchas	- V	Oda		Juan Folino Posada Colomborguidoas
	Musterious	Oua.	Challow	Ê	Oua.	Quellievais	Debert Lemitten Lloud Lill che
	Nysterious	Oua.	Shelley	^	Oua.	Zena	
	Naevnoez	Oam.	naevium	×	Oda.	noeziiana	Robert Hamilton - Hawk Hill Labs
	Nancy's Palace	Odm.	Nancy Crees	×	Oda.	Crystal Palace	Tyler Albrecht
	Oedipus	Oda.	Saint Joe	×	Oda.	Joe's Drum	Robert Hamilton - Hawk Hill Labs
	Palace of Desire	Oda.	Desirable	×	Oda.	Crystal Palace	Robert Culver
	Park Point	Oda.	West Park	×	Oda.	Golden Point	Juan Felipe Posada - Colomborquideas
	Pesky Bull	Odm.	Pesky Trance	×	Oda.	Wilda Bullard	Andrew Easton - New Horizons Orchids
	Primavera Prince	Oda.	Primavera	×	Oda.	Vultan's Trouble	Robert Hamilton - Hawk Hill Labs
	Prime Day	Oda.	Gualanday	×	Oda.	Primavera	Juan Felipe Posada - Colomborquideas
	Prince Ahmad	Oda.	Prince Vultan	×	Oda.	Charlesworthii	Robert Hamilton - Hawk Hill Labs
	Prince Charming	Oda.	Patricia Hill	×	Oda.	Prince Vultan	Robert Hamilton - Hawk Hill Labs
	Prince Posey	Oda.	Prince Vultan	×	Cda.	Lois Posey	Robert Hamilton - Hawk Hill Labs
	Prince Shelley	Oda.	Shellev	×	Oda.	Prince Vultan	Robert Hamilton - Hawk Hill Labs
	Queen's Port	Oda.	Queen River	×	Oda.	Petit Port	Robert Hamilton - Hawk Hill Labs
	Queen's Tryst	Oda	Queen River	×	Oda	Burning Bed	Robert Hamilton - Hawk Hill Labs
	Reddy	Oda.	Sanderae	×	Oda.	Trivon	Juan Feline Posada - Colomborquideas
	Saint Ionathan	Oda.	Saint Clement	×	Oda.	Burning Bed	Pohert Hamilton - Hawk Hill Labs
	Saint Storling	Oda.	Saint Wood	-	Oda.	Elerence Stirling	Robert Hamilton - Hawk Hill Laba
		Oua.	Sallit WOOU	Ê	Oua.	Piorence Summy	Robert Hamilton - Hawk Hill Labs
		Oda.		×	Oam.	Pesky Trance	Robert Hamilton - Hawk Hill Labs
		Oda.		×	Oda.	Prince Vultan	Robert Hamilton - Hawk Hill Labs
	Samares Rolf	Oda.	Samares	×	Odm.	Rolfeae	Juan Felipe Posada - Colomborquideas
	San Polo	Oda.	Clever	×	Oda.	Golden Rialto	Robert Hamilton - Hawk Hill Labs
	Santa Granada	Oda.	Santamaria	×	Oda.	Granada	Juan Felipe Posada - Colomborquideas
	Santa Naranja	Oda.	Shibory	×	Oda.	Santamaria	Juan Felipe Posada - Colomborquideas
	Sea of Tranquility	Odm.	Tribbles	×	Oda.	John Miller	Robert Hamilton - Hawk Hill Labs
	Shelldance	Oda.	Shelley	×	Odm.	Parade	Andrew Easton - New Horizons Orchids
	Shibory Rolf	Odm.	Rolfeae	×	Oda.	Shibory	Juan Felipe Posada - Colomborquideas
	Speculation	Cda.	Lois Posey	×	Odm.	Eximium	Robert Hamilton - Hawk Hill Labs
	Susan Drummer	Oda.	Susan Preston Richards	×	Oda.	Drummer Boy	Juan Felipe Posada - Colomborguideas
	Susan Firestorm	Oda.	Rustic Firestorm	×	Oda.	Susan Preston Richards	Juan Felipe Posada - Colomborguideas
	Susan Harry	Oda.	Susan Preston Richards	×	Oda.	Drummer Harry	Juan Felipe Posada - Colomborquideas
	· · ·	· · ·		1	· ·		

Name		Parent	age	Registered By			
ODONTIODA (cont.)	Susan Levsa	Oda	Levsa	×	Oda	Susan Preston Richards	Juan Feline Posada - Colomborquideas
	Susan Ube	Oda.	Susan Preston Richards	×	Oda.	Mont Libe	Juan Felipe Posada - Colomborquideas
	Swizzle	Oda.	Tipples	×	Oda.	Burning Bed	Robert Hamilton - Hawk Hill Labs
	Tippling	Oda.	Tipples	×	Oda.	Florence Stirling	Robert Hamilton - Hawk Hill Labs
	Trance	Odm.	Pesky Trance	×	Oda.	Mem Ken Girard	Robert Culver
	Trisam	Odm.	Tribbles	×	Oda.	Samares	Robert Hamilton - Hawk Hill Labs
	Vultan's Trouble	Oda.	Prince Vultan	×	Odm.	Tribbles	Robert Hamilton - Hawk Hill Labs
	Wager	Odm.	Tribbles	×	Oda.	Avranches	Robert Hamilton - Hawk Hill Labs
	Wild in Bed	Oda.	Wilda Bullard	×	Oda.	Burning Bed	Andrew Easton - New Horizons Orchids
	Yellow Portent	Odm.	Stonehurst Yellow	×	Oda.	Portentosa	Juan Felipe Posada - Colomborquideas
ODONTOCIDIUM	Bob Fair	Odcdm.	Bob Hoffman	×	Odcdm.	Mayfair	Juan Felipe Posada - Colomborguideas
	El Guarzo	Odcdm.	Cambalache	×	Odcdm.	Tiger Star	Juan Felipe Posada - Colomborguideas
	El Retiro	Odcdm.	Tiger Star	×	Odcdm.	Mavfair	Juan Posada - Colomborquideas
	Illustrious Crisp	Odm.	Hallio-Crispum	×	Onc.	Illustre	Andrew Easton - New Horizons Orchids
	Los Salados	Odcdm.	Solana	×	Odm.	Moselle	Juan Felipe Posada - Colomborguideas
	Thalia Gold	Odcdm.	Tiger Hambühren	×	Odm.	Excellens	Robert Hamilton - Hawk Hill Labs
	Caty	Odm	aloriosum	×	Odm	nohile	Deburgbaraeve Guido
ODONTOOLOOOOM	Entrancing Nicky	Odm	Pesky Trance	×	Odm	Pesky Nicky	Robert Hamilton
	Entra Noble	Odm	Noble Parade	×	Odm	Evtraria	Robert Culver
	Colden Panise	Odm	Colden Crisn		Odm.	Danico	Juan Feline Posada - Colomborquideas
	Horb Charada	Odm	Horb Thoroson	~	Odm	Charado	Juan Folino Posada - Colomborquideas
	Herlinde	Odm			Odm		Deburghgraphy Cuide
		Odm	Lieva Doolay Nielay		Odm	nobilo	Debut Hamilton Howk Hill Loha
	Katrian	Odm			Odm	nobile	Robert Hamilton - Hawk Hill Labs
	Kalileil	Odm.	Tribbles	^ 	Odm.	Delface	Deburgrigraeve Guido
	Leprechaun	Oam.	INDDIES	×	Oam.	Rolfeae	Robert Hamilton - Hawk Hill Labs
	Lucy vvyatt	Oam.		×	Oam.	wyattianum	Juan Felipe Posada - Colomborquideas
		Oam.	Nicky Strauss	×	Oam.	Toreador Blanco	Robert Culver
		Oam.	NICKY Strauss	×	Oam.	Pesky Nicky	Robert Culver
	Nobil Ken	Oam.	Ken Armour	×	Oam.	pescatorei	Juan Felipe Posada - Colomborquideas
	Noble Parade	Odm.	pescatorei	×	Odm.	Parade	Robert Hamilton - Hawk Hill Labs
	Noble Ross	Odm.	Bic-ross	×	Odm.	pescatorei	Andrew Easton - New Horizons Orchids
	Panise Cristal	Odm.	Panise	×	Odm.	cristatellum	Juan Felipe Posada - Colomborquideas
	Stipple	Odm.	Pesky Trance	×	Odm.	Doctor Iom	Robert Hamilton - Hawk Hill Labs
	Ioreador Blanco	Odm.	Laura Hett	×	Odm.	Iordonia	Robert Culver
	Irirade	Odm.	Iribbles	×	Odm.	Parade	Robert Hamilton - Hawk Hill Labs
	Venobile	Odm.	Venilia	×	Odm.	nobile	Robert Hamilton - Hawk Hill Labs
	Yellow Tenue	Odm.	Stonehurst Yellow	×	Odm.	Tenue	Juan Felipe Posada - Colomborquideas
ODONTONIA	Colomcharade	Odtna.	Colombia	×	Odm.	Charade	Juan Felipe Posada - Colomborquideas
RHYNCHOSTELE	Veiled Beauty	Rst.	candidula	×	Rst.	bictoniensis	Robert Hamilton - Hawk Hill Labs
VUYLSTEKEARA	Avril Charles	Odtna.	Avril Gay	×	Oda.	Charlesworthii	Juan Felipe Posada - Colomborquideas
	Cambrian Charge	Vuyl.	Cambria	×	Oda.	Charlesworthii	Andrew Easton - New Horizons Orchids
	George Col	Odtna.	Colombia	×	Oda.	George McMahon	Juan Felipe Posada - Colomborquideas
	Larry Sanford	Vuyl.	Cambria	×	Oda.	Brewii	Andrew Easton - New Horizons Orchids
	Neonova	Vuyl.	Nova	×	Oda.	Avranches	Robert Hamilton - Hawk Hill Labs
	Piddle	Vuyl.	Cambria	×	Oda.	Prince Vultan	Robert Hamilton - Hawk Hill Labs
	Troubled Red	Vuyl.	Mem Mary Kavanaugh	×	Oda.	Charlesworthii	Andrew Easton - New Horizons Orchids
WILSONARA	George Fair	Odcdm.	Mayfair	×	Oda.	George McMahon	Juan Felipe Posada - Colomborquideas
	George Pimlico	Wils.	Pimlico	×	Oda.	George McMahon	Juan Felipe Posada - Colomborquideas
	Leysa Lustre	Wils.	Blazing Lustre	×	Oda.	Leysa	Juan Felipe Posada - Colomborquideas
	Portent Fair	Odcdm.	Mayfair	×	Oda.	Portentosa	Juan Felipe Posada - Colomborquideas
	Thanksgiving Fire	Wils.	California Cherub	×	Odm.	helgae	Andrew Easton - New Horizons Orchids
	Tiger Avranches	Onc.	tigrinum	×	Oda.	Avranches	Juan Felipe Posada - Colomborquideas
	Tiger George	Odcdm.	Tiger Hambühren	×	Oda.	George McMahon	Juan Felipe Posada - Colomborquideas
	Vultan's Gem	Wils.	Calico Gem	×	Oda.	Vulcan's Trouble	Robert Culver
	Wilda's Cherub	Oda.	Wilda Bullard	×	Wils.	California Cherub	Andrew Easton - New Horizons Orchids