

Podangis dactyloceras by Brenda Oviatt and Bill Nerison

Learning from Mistakes

WE LOVE THESE little orchids! When happy and in full bloom they are a delight, producing a plethora of hyaline flowers with bright green anther caps, beautifully presented on exquisite little fan-shaped plants. But our *Podangis dactyloceras* are not as happy as they used to be. We have had at least one in our collection since 1991, and they have been growing and faithfully blooming for us each June (in Montana). But because they are not doing as well as they used to, we wanted to determine what went wrong and fix it. We divided and repotted them all (about a dozen many-growth plants) in January of 2016. The increase in quantity from dividing them meant they needed to go in a new location because of space constraints. Normally, we would conclude that the change in location or the timing of the dividing–repotting would be the reason for a decline, but the perplexing part is that ¼ died straight away, ¼ thrived (and continue to do so) and the other half, though alive, are not as vigorous as we would like, or as they were prior to dividing. Our challenge is that we changed too many variables at once and that has made it hard to figure out exactly what we did wrong! Another variable was that in January 2016 we repotted the plants in plastic pots with Orchiaata (power and power plus sizes), whereas we had previously grown them in unglazed terra-cotta pots. There is never enough time to do everything we need to do, so though we wanted to, other parts of life took priority and we were not able address them again until February of 2017.

After removing a few from their pots, we could see that there were nearly no live roots left in the bark mix and that they appeared to be overwatered (not a typical occurrence in our greenhouse). Brenda decided to experiment and removed a dozen plants of similar “live but unhappy” condition. She put half in unglazed terra-cotta pots with Orchiaata; three went in the old location and three in the “new” location. The others were put into net pots with Orchiaata and into plastic pots with an even split in locations. We quickly found that in our greenhouse, although they work well for some other angraecoids, net pots = death for *Podangis dactyloceras*. The worst were the net pots in the old location, followed by the net



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pots in the new location. That was too extreme ... they were getting overly dry. Those in terra-cotta pots were better, but most of their roots were reaching out into the air, not growing down into the pots! Sadly, we lost so many plants we ended up replicating the old potting method and had room to put them back in their original location.

A challenge to us, and to many orchid

- [1] A single-growth *Podangis dactyloceras* with a lovely presentation of glass-like flowers on a mini fan-shaped plant.
- [2] Our *Podangis* BEFORE January 2016...thriving!
- [3] Our *Podangis* AFTER we changed too many variables...it saddens us.

growers, is that we have a wide variety of plants in our collection; we generally have about 8,000 plants; over 700 species from 180 genera. Our greenhouse is 30 feet × 60 feet (9.8 m × 18.3 m), oriented north–south with solid end walls and is buried 4 feet (1.22 m) in the ground. We have mazes of vertical screens and three growing levels on most benches. There are so many different microclimates in this space, it allows for a wide variety of species to grow well, but it can take time to determine the “best” locations for plants. We have four areas that are “perfect” for many of the touchier angraecoids. We wish those areas took up a larger portion of the greenhouse and are always attempting to modify conditions to achieve this. There are the right amount of light and air movement so that when watered properly, the plants thrive. Because our goal has been shifting over the last 14 years, from growing and selling orchids we like, to reproducing rare and endangered species angraecoids, it is the latter that takes precedent in the positioning in the greenhouse. Until we determine the “perfect spot” for a new acquisition, we will sometimes grow individuals in several locations. We like to think we have learned from our mistakes with the *Podangis* and will not repeat them.

Podangis dactyloceras is widespread in Africa from Angola, Cameroon, DR Congo, Ghana, Ivory Coast [Côte d’Ivoire], Nigeria, Sierra Leone, Tanzania and Uganda. There is documentation both on herbarium samples and on the internet listing it as endemic to Madagascar as well. This is incorrect; it is from mainland Africa only. *Podangis* was a monotypic genus until 2012, when the species *Rangaeris rhipsalisocia* was reclassified as a *Podangis*.

It grows epiphytically on branches in semideciduous forests and often in gallery forests along watercourses at an elevation of 2,500–6,400 feet (750–1,950 m). Gallery forests form as corridors along rivers or wetlands and project into surrounding landscapes that are otherwise only sparsely treed, such as savannas, grasslands or deserts. This knowledge of altitude and location lets us know that a diurnal temperature change (at least part of the year) is important in an ex situ growing environment. Notes on specimen collection listings list it as being common on fallen trees with lichens all over the tree as well as on the roots of the orchid (see photograph #5).

The genus *Podangis* was established

Too Many Variables

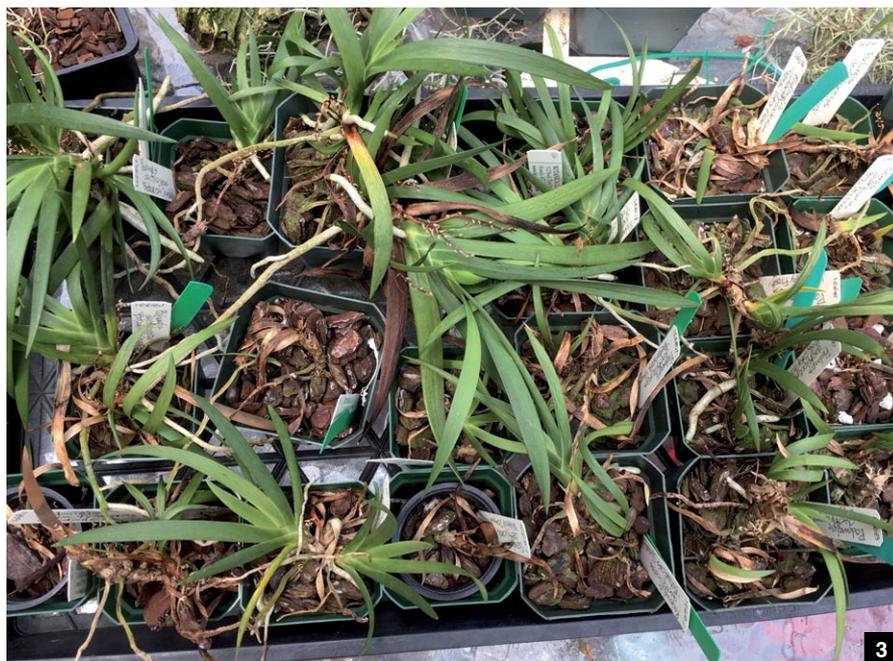
WE KNOW BETTER, but we changed too many variables to be able to determine easily what we did wrong with our *Podangis*.

LOCATION CHANGE We moved the plants from the east side of the greenhouse (against an outside wall) to the northwest part of the greenhouse, shaded by larger plants. The light was similar, but we now question the temperature change in the new location. Our new location did not have as large a diurnal temperature change, and we feel this may be important for *Podangis*. Many species benefit from a rather dramatic day–night temperature change.

POTTING MIX We changed from a fir bark–charcoal–perlite mix in unglazed terracotta pots to Orchiaita in plastic pots. That alone was a big change! We now use a mix of Orchiaita with perlite rather than straight Orchiaita because it seemed to stay too wet for us. That combination with a plastic pot did not work well for most of the *Podangis* we repotted. We have found Orchiaita to be a wonderful medium, but it can stay too wet. We have begun to add perlite (two parts Orchiaita, one part perlite). The perlite initially holds moisture, but acts as an air pocket when it dries.

TIMING OF REPOTTING We write potting dates on our tags, and there are very few repotted in December and January. Our day length is short and days tend to be overcast — NOT an ideal time to repot angraecoids. When we looked at the *Podangis* this January, there were no active roots that we like to see when repotting. Our anxious repotting was very detrimental to the plants.

We recommend when making changes with your orchids, try to limit the number of changes and be patient to wait for the result before making another change.



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by Rudolf Schlechter in 1918 for a plant originally described by H.G. Reichenbach as *Listrostachys dactyloceras*. Both the species name and new genus names are interesting. When Reichenbach described *Listrostachys dactyloceras* he must have thought that the lobed tip of the spur resembled fingers, and used the Greek *dactyl* (fingers) and *ceros* (horn) to refer to the spur. When Schlechter created the genus *Podangis*, it presumably reminded him of toes, as the name is derived from

the Greek words *podos* (foot) and *angos* (vessel), again referring to the shape of the spur.

We like to review the synonyms for each species we write about. It gets confusing when a single plant is known by many names. Fortunately, with this species, it is unlikely that you will find any of its synonyms used in current literature, as the most recent change was made in 1918. Still, it is interesting to see that it has gone by five other names; its



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homotypic synonyms are *Listrostachys dactyloceras* (its first name) and *Angrorchis dactyloceras*; and its heterotypic synonyms are *Listrostachys forcipata*, *Angraecum forcipatum* and *Listrostachys saxicola*.

The Austrian naturalist and explorer Friedrich Martin Josef Welwitsch (1806–1872) spent much of his life studying the flora of Portugal. The Portuguese government sent him to gather plants of economic value in Angola, a Portuguese colony. He is credited with first collecting *Podangis dactyloceras*, which is listed in several sources as an anodyne — a painkilling drug or medicine used for general body pain. A note in the Kew collection listings states that one of their herbarium specimens was “collected by a carrier as he wanted to grind it up wholly and drink as a medicine good for pains.” We found the extent of its use for pain unclear. Welwitsch’s most notable discovery was a gymnosperm in 1859. Plant “nerds” may recognize his name for the odd species *Welwitschia mirabilis (bainesii)*, which has only two continuously growing leaves, which split and eventually rot at the ends, and lives for hundreds of years.

Are the flowers of *Podangis dactyloceras* fragrant? We cannot remember, and depending on where you look, you will read, “Fragrant!,” “Slight fragrance,” and “Fragrant? No.” Our healthy plants will bloom after this article is completed, and we are going to pay



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careful attention this year to see if they are fragrant and, if so, what that fragrance is like. We will report back!

As of this writing, there are no hybrids registered using *Podangis dactyloceras*. The species has garnered six AOS awards over the years (1 CBM, 2 AMs and 3 CCMs). Average statistics including all the awards are 99 flowers and 44 buds on 16 inflorescences. Happy plants are able to put on showy displays for their owners!

CULTURE Cultural information for many of the rare species we grow is sadly lacking. You may find *Podangis dactyloceras* available for sale, but when you look for cultural information, it varies wildly! Certainly, some variation

- [4] Even for a single species, we will try many growing methods to determine what works best.
- [5] *Podangis* are sturdy little plants that manage to survive rather harsh conditions in nature. Photographed at Mpati Hill, Cameroon, www.africanplants.senckenberg.de.
- [6] Do you see fingers and toes? The genus name *Podangis* is from the Greek words *podos* (foot) and *angos* (vessel) referring to the spur shape. The species name *dactyloceras* is from Greek for *dactyl* (fingers) and *ceros* (horn) again referring to the shape of the spur.



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comes from where the grower is located (Montana versus Sierra Leone versus Texas, for example), but in researching information as we looked at our stressed group of plants, we realized we needed to learn more, hence this article. We have read “must be kept evenly moist throughout the year” to “must dry out between watering” to “requires a dormancy.” We have put together what we believe to be an accurate summation of do’s and don’ts when caring for them; based on our mistakes.

Light Intermediate light (1,200–2,300 fc) has worked well for us. This is the one variable we did NOT change as we grew them. Certainly, they are a bit tolerant outside this range, but we consider this ideal.

Water (frequency/quality) Sadly, we did not adjust our watering frequency when we changed our pots and medium. They certainly could be grown in a mix that stays moist longer, provided you allow

the medium to dry completely between watering. We removed plants from plastic pots that had beautiful (and surprisingly extensive) root systems which had subsequently died from overwatering. This can happen quickly. We know this was our biggest mistake with our *Podangis* and in doing research for this article it is evident that overwatering is the leading cause of death for these lovely little plants.

With all our orchids, we stress the importance of water quality. We feel that reverse-osmosis or rainwater is essential, especially if you decide to grow yours mounted. We use ½-strength fertilizer and periodically “flush” with clean water. We rotate fertilizer formulas and always provide micronutrients.

Temperature and air movement Our greenhouse ranges from 53 F (11.7 C) at night in the coldest areas during the fall and winter to 96 F (35.6 C) during the day in the spring and summer. When we moved our *Podangis*, they moved from an

outside wall to a more central location. This had an effect on their night-time temperature; they did not get as cool in their new location. Although *Podangis* are intermediate- to warm-growing orchids, we suspect they benefit from cooler nights. Some air movement is essential; try to mimic nature in this regard.

Potting versus mounting Potted plants MUST be watered accordingly for the type of pot they are in and the type of medium in their pot. If using plastic pots and a medium that does not dry quickly, make sure to water less often. Do not make the same mistake we made! As stated earlier, our best results have occurred with a free-draining medium in unglazed terracotta pots.

Although we have had great success growing *Podangis dactyloceras* mounted, in general we opt for potting them. It is less time consuming (especially if you do it correctly the first time) and many growers are put off by the challenges of

mounted orchids. Do realize, though — in nature they rarely grow in pots!

Dormancy With many angraecoids, a dormancy is essential. We believe this to be one of the trickiest parts to growing them well because is it not as clear cut as with other orchids (e.g., *Cycnoches*). Give *Podangis* plenty of water when growing (still allowing them to dry between watering), but also give them a “rest” — not exactly a dormancy — during the winter. The combination of being a bit drier and cooler during the winter is likely a big reason our *Podangis* thrived for so many years.

HOPE FOR SURVIVAL We faithfully speak of protecting species from extinction by protecting them in situ [IN their environment] and ex situ [AWAY from their native environment] — such as in YOUR own growing area. We have found through our research that we also need to address the protection of *Podangis dactyloceras* from their well-intentioned growers. Please take note of our suggestions and learn from our mistakes! Our goal is to inform other growers in hopes that no one else will say, “Yes, I tried to grow one of those but I killed it.” Share your knowledge and skills with other growers — ESPECIALLY with regard to rare and endangered species!

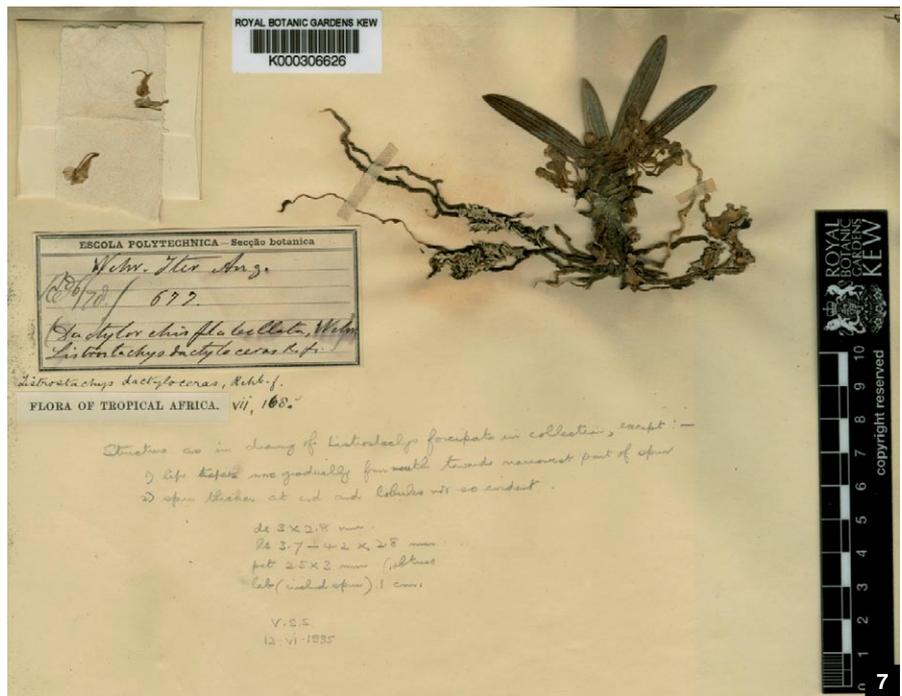
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ACKNOWLEDGMENTS

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— *Brenda Oviatt is an artist and Bill Nerison is an architect. They live on the Clark Fork River in Missoula, Montana (a corner of paradise) with their daughter Marisa, son Tristan and an assortment of*



animals. They've been growing orchids together for 34 years and in that time have grown in many settings. For the last 14 years, their orchid growing has focused on the ex situ propagation of endangered Angraecoids and the education of hobbyists and growers (website: botanicaltd.com).

[7] *Podangis dactyloceras* collected by Friedrich Martin Josef Welwitsch at Pungo Andongo, Angola. The pressed plant has just four leaves on a rather stout stem, but look at all those flowers! Courtesy of the Royal Botanic Gardens, Kew, <http://specimens.kew.org/herbarium/K000306626>.

[8] Our mounted *Podangis dactyloceras* have grown well for us. We use cork plaques with a small coconut husk fiber pad for a bit of added moisture retention. We DO NOT place a moisture pad between the plant and the substrate.