

COLLECTOR'S ITEM

Angraecum dollii by Brenda Oviatt and Bill Nerison

An Elusive Gem



IF THIS FLOWER had the color of *Phragmipedium kovachii*, you'd be seeing it everywhere. Not all newly "discovered" species get the attention they deserve. Yes, it's green and white. But it is beautiful, fragrant, quite easy to grow and bloom, and it is modest in size. It has so many positive attributes!

Of course, we have not met an angraecum that we do not like. Taxonomically, *Angraecum dollii* belongs to *Angraecum* Section *Perrierangraecum*. This section (see sidebar) is a particular favorite of ours because its plants are all small to medium size and though they primarily have single-flowered inflorescences, most have flowers that are very large compared to the size of the plant. A few species from this section are readily available and if you do not yet have one, you should. We would like to have the "complete collection" and are striving toward that, but it is difficult when many are extremely rare in nature and even less common in cultivation.



Brenda Oviatt and Bill Nerison

When we write about a species, we always check for awards it may have earned and hybrids created with it. We checked our reliable sources: Marion Allen for AOS awards and Julian Shaw for registered hybrids. We came up empty-handed. *Angraecum dollii* has also not yet been assessed for the International Union for Conservation of Nature's Red List of Threatened Species (many of the plants we care about are listed there). In an Internet search, many images are incorrect (mis-labeled plants or photos). Much of the information, including photos, found on the Internet is contained in blogs. We were not having a lot of luck finding new information, so we went back to our books. If you like angraecoids and own the book *Angraecoid Orchids* by Stewart, Hermans and Campbell (2006), note that the photo on the back of the jacket is *Angcm. dollii* (taken by Johan Hermans). As he has spent much time there, we were sure we would be able to contact Johan and include a jaw-dropping photo of it in situ in Madagascar. Unfortunately he replied "I have never seen *Angcm. dollii* in flower in the wild." We were still empty-handed.

As we began writing this article, our good customer Walter Crawford sent us a photo of his *Angcm. dollii* in bloom. It is rewarding to receive an email from



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a customer showing their success! Like most in this country who grow *Angcm. dollii*, his plant was imported from Malala Orchidees in Madagascar. We regularly handle preorders for Michelle Andriamanamihaja, and import plants for people who otherwise would not be able to get them (ordering just a few plants is prohibitively expensive). Walter got his *Angcm. dollii* from our October 2014 order and its first flower opened February 1, 2015. It is interesting to note that when bringing plants from the Southern Hemisphere (especially to places as far north as Montana or Wisconsin) you are, in essence, giving them a repeat of seasons, i.e., two summers in a row or two winters in a row. The *Angcm. dollii* that we have imported in the fall have bloomed the following February for us as Walter's did for him. We have imported them in

- [1] *Angraecum dollii* 'Silas' received a CBR/AOS on February 21, 2015. Identification was confirmed by the SITF on March 6, 2015. Grower: Walter Crawford. Photograph by Michael Rollinger.
- [2] *Angraecum dollii* is a gem that will reward you with stunning, crystalline white and green flowers. Grower: Botanica, Ltd.
- [3] These four flowers opened in succession over a month; the first one was just beginning to fade when this photo was taken. Notice the seed capsule still developing after a full year on the plant. Grower: Botanica, Ltd.

the spring and had them “skip” a bloom cycle and then bloom in July and August the following year. All of our *Angcm. dollii* plants have adjusted to the Northern Hemisphere and bloom regularly in July and August.

Since we often ask other growers about their successes and growing conditions, Walter’s photo arrived with perfect timing. You will find information about where he grows his plant in the culture section below; it is quite different from our conditions (perhaps more like yours). Then we really got a break! Between the time Walter sent the photo and our completing this article, Walter displayed his blooming plant at the Batavia Orchid Society show in Chicago and received a provisional Certificate of Botanical Recognition award (CBR/AOS; pending confirmation by the AOS Species Identification Task Force [SITF]). Way to go! We were no longer empty-handed though still had no in situ photo.

This deserves a little explanation for those not familiar with CBRs, Certificates of Horticultural Merit (CHM) or the SITF. I reconnected with Marion Allen because the official description of the awards and what we have been told by judges over the years even had us a bit confused. Judging always has some personal bias involved, but there are guidelines to observe. Officially, a CBR can be awarded to a rare and unusual species with educational interest that has received no previous awards (we have a few of these for angraecoids). Marion helped us further understand by saying it is often given to a plant of no particular “use” horticulturally that is not on the books yet. It is basically to establish a baseline for judges to use when, or if, the plant is taken to judging again or another example of the species shows up. Officially, a CHM is awarded to a well-grown and well-flowered species or natural hybrid with characteristics that contribute to the horticultural aspects of orchidology, such as aesthetic appeal (we have a few of these too, for angraecoids). Typically this would be given to a species that will be of commercial value in hybridizing, i.e., a species like *Phragmipedium kovachii*. In addition to the potential in making hybrids, Marion states that once the award is published, people get to seeing it and will hopefully be encouraged to grow it; thus increasing the number of plants in collections. We really like that idea! So, Walter’s *Angcm. dollii* received a “provisional” award pending positive identification from the SITF. To get an idea of the plants they have reviewed visit their website. (SITF 2015).

Angraecum section *Perrierangraecum*

(from Madagascar except as noted)

<i>aloifolium</i>	<i>curvicalcar</i>	<i>didieri</i>
<i>ambrense</i>	<i>dollii</i>	<i>drouhardii</i>
<i>ankeranense</i>	<i>dryadum</i>	<i>elephantinum</i>
<i>bicallosum</i>	<i>equitans</i>	<i>imerinense</i>
<i>borbonicum</i> (Réunion)	<i>kraenzlinianum</i>	<i>lecomtei</i>
<i>breve</i>	<i>letouzeyi</i>	<i>liliodorum</i> (Réunion, Mauritius)
<i>chimanimaniense</i> (Zimbabwe)	<i>litorale</i>	<i>longicaule</i>
<i>clareae</i>	<i>obesum</i>	<i>oblongifolium</i>
<i>compactum</i>	<i>palmicolum</i>	<i>peyrotii</i>
<i>compressicaule</i>	<i>pseudodidieri</i>	<i>rigidifolium</i>
<i>cucullatum</i> (Réunion, Mauritius)	<i>rutenbergianum</i>	<i>sambiranoense</i>
<i>curnowianum</i>	<i>stella-africae</i> (Malawi, Zimbabwe, South Africa)	<i>urschianum</i>



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All CBR and CHM awards, as well as the first award to a species (sometimes the first award is a flower quality award), are held as provisional pending the taxonomic verification by the SITF, which is headed by Dr. Patricia Harding. Photos and descriptions are sent to her by either the judging center or the exhibitor. These are then posted to a blog that this group of nine dedicated volunteers uses to communicate and they begin researching published material. The ease by which plants are verified can vary greatly depending upon reference books and online information as well as the quality and detail of the

- [4] Growing in a basement under T5 fluorescent lights. Notice how one root has attached to the cedar shake! Grower: Walter Crawford.
- [5] *Angraecum dollii* has a funnel-shaped spur which narrows and curves back on itself. The spur can be 5-1/2 inches [14 cm] long. Grower: Botanica, Ltd.
- [6] This is the holotype of *Angraecum dollii* discovered near Antsirabe, Madagascar; photographed and described by Karlheinz Senghas in 1997.
- [8] Hilmar Doll; after whom the plant was named.

photos submitted. The group calls on a worldwide group of willing experts who also aid in the process when required. We are asked about this species by customers often enough to know that even though it may lack the commercial value of *Phragmipedium kovachii*, that there are still people all over the world who want one in their orchid collection.

Now for a little background on this beautiful species. It was photographed and described in 1997 by Karlheinz Senghas (1928–2004) in *J. Orchideenfreund*. Senghas was a botanist who studied with Werner Rauh (if you like bromeliads and succulents, you know this name). Rauh persuaded Senghas to take responsibility for the “orchids section” in 1960 and from then until his retirement, Senghas was the curator and scientific director of the Botanical Gardens in Heidelberg. He described and named *Angcm. dollii* after Hilmar Doll, owner of The Royal Orchid Orchideengarten in Bonn, Germany. Interestingly, another orchid named after Doll was *Paphiopedilum dollii*, though it is now considered a synonym of *Paphiopedilum henryanum*.

The holotype of *Angcm. dollii* (a holotype is a single physical example—or illustration—used when the species was formally described) was discovered near Antsirabe, Madagascar, and the species is endemic to the seasonally dry forest in Antananarivo and Fianarantsoa provinces. During their growing season the area receives average rainfall of 2.83–8.03



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inches (72–204 mm) per month, with some months getting 20 days of rainfall. The average temperatures range from 51.8 to 68 F (11–20 C). Months in the dry season average less than 0.59 inch (15 mm) of rain and the average temperatures range from 42.8 to 59 F (6–15 C). Keep in mind these are averages, not extremes, in precipitation and temperature. This information can be important to know when growing unusual species; especially those just imported from their native environment. As a general rule, once a species has been grown a generation or two ex situ, they are less temperamental;



JOHAN HERMANS

Color in Angraecums?

Not typical, but possible.



You will not generally hear us talk about hybrids, but Ron Ciesinski (Taylor Orchids in Monroe, Michigan) got some nice pink color into *Angraecum magdalenae* with the introduction of a *Paraphalaenopsis* and created *Paraphalaenopsis Memoria Barbara Oviatt*. There is great potential.



How about this *Angraecum obesum*? No, it's not a Photoshop creation and we did not infuse it with dye. On the way to an orchid show, this flower mysteriously began to change color. The petals and sepals turned VIVID red over the next two days. The cause? We never found out, and subsequent blossoms have been normal.



but there are always exceptions.

CULTURE We acquired our first plants of *Angc. dollii* in 2008 and everything we read about them described them as “pendant.” Having read that, we mounted them in a pendent fashion on cork plaques. Without fail, every single one has curved to grow upright. We suspect that in nature, growing from tree branches and “hanging” aloft, they appear pendent. They grow just as well and look less like a roller coaster when mounted upright or potted. We have many other species in the section *Perrierangraecum* that grow in a similar fashion. It seems that no matter how they are being grown, any new growths branching from the main stem grow upright, not pendent. They look quite “stately” when grown in a pot, but at some point they become too tall to support themselves and tip or require support. Without that support, they do become more “pendent-like.”

We’ve grown *Angc. dollii* in two locations of our greenhouse; some are in a central area that has more shade and less diurnal temperature variation and others

are against the east wall of the greenhouse where they receive brighter light and where on cold winter nights the temperatures drop into the low 50s F (around 10–11 C). We observed that those on the east wall grew more vigorously, had larger flowers, more torpid leaves and more aggressive roots, so all are now located there. We have our parent plants there now, and all but one have grown and connected to one another. They bloom in July and August like clockwork. This preferred location gets 3,000–6,000 foot-candles of light (midday highs during the year) with extreme temperatures of 53 F (11.7 C) as a nighttime low in the winter to 96 F (35.6 C) as an afternoon high in the summer. In the summer we keep the plants’ roots covered with Spanish moss (*Tillandsia usneoides*) to prevent dehydration and to protect the roots from excess light. We remove the moss in the fall. We’ve not lost a plant in this location.

Walter grows his *Angc. dollii* in a basement in Milwaukee, Wisconsin, under mostly T5 fluorescent lights that are on from 7:30 am to 9:00 pm. He strives

to get the temperature in the growing area below 60 F (15.6 C) at night and doesn’t let it exceed 80 F (26.7 C) during the day. He has quite a rigorous arrangement of windows and fans to achieve this. Good light and cool nights seem key to growing and blooming *Angc. dollii* well.

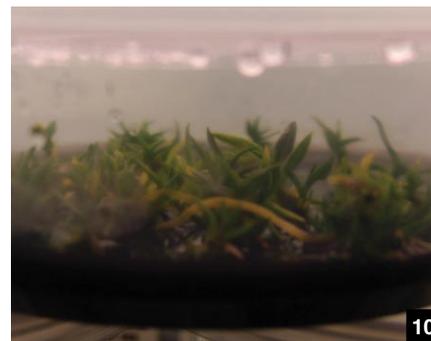
From a review of their native habitat, we know *Angc. dollii* desires copious amounts of water when growing and to be dryer and cooler when not in active growth. Watch the root tips and monitor leaf growth on your plants to know when to make seasonal changes. We stress the importance of water quality, especially when growing plants mounted. Perhaps the most important thing about water is to know what you have, and the only way to know what you have is to test it. When we lived and grew orchids in Seattle, we had some of the best publicly available; it was very low in total dissolved solids (TDS). We did not need a reverse osmosis (RO) system or distilled water for our plants or fish. We now live in western Montana and use well water that contains approximately 245–250 parts per million



- [9] *Angraecum dollii* is most often described as “pendent.” Pendent only? Well, not really.
Grower: Botanica, Ltd.
- [10] A seed capsule on *Angraecum dollii*. Notice the dried remnant of the spur persisting.
Grower: Botanica, Ltd.
- [11] Seedlings of *Angraecum dollii* in flask. They are very slow growing compared to many of the other orchids we currently have in the lab. Grower: Botanica, Ltd.

(ppm) TDS. When using this well water on our mounted orchids, they quickly show the accumulation of salts. An occasional watering with water from our well provides some needed minerals but a steady diet will eventually cause mineral buildup on the leaves and roots preventing proper transpiration. Add to this the use of fertilizers and nutrient supplements and it can get a little confusing. That is why we recommend testing your source water prior to the addition of fertilizers and amendments to get a basic TDS reading. If you have a TDS reading under 100 ppm you probably have water that does not require additional filtration. If your TDS reading is between 100 and 200 ppm you should consider some kind of filtration and if it is over 200 ppm TDS we highly recommend an RO system or use of distilled or rain water. If you purchase water, know what you are starting out with before putting it on your plants. Bottled spring water has some of the highest TDS levels that we’ve tested. After you have obtained a clean source of water add what you like to give your plants and test it again. After all, it is what you eventually put on the plant that

matters. You are what you eat!
HOPE FOR SURVIVAL Why don’t we see this species more widely available? It certainly merits as much attention as many other species grown widely in the commercial market. We believe that in part, it is due to the difficulty in propagating it on a large scale. In the 1980s Fred Hillerman wrote about *Angraecum bicallosum* (another species in section *Perrierangraecum*), “Once the germination secrets are learned and seedlings are available, there will be no reason for it not to be found in all good collections” (Hillerman and Holst 1986). The fact that these are NOT available speaks volumes about how difficult some of the angraecoids are to reproduce and how important continued propagation efforts are. We’re doing our best to propagate this and other species and make them available in the commercial market to everyone who might want to grow them; this is truly an elusive and beautiful gem! As always, we encourage everyone to share pollen, seed, information and encouragement when it comes to the reproduction of rare and endangered species (even if they’re not



angraecoids)!

References

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Acknowledgements

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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 30 years and in that time have grown in many settings. For the last 10 years, their orchid growing has focused on the ex situ propagation of endangered angraecoids and the education of hobbyists and growers (website botanicaltd.com).*