

# *Diaphananthe bidens*

by Brenda Oviatt and Bill Nerison

An Orchid with Elegant Presence

[1] A particularly nice color form showing the flowers in detail. Photograph courtesy of Rudolph Jenny.  
[2] *Diaphananthe bidens* viewed from the side to see all of its delicate flowers. Grower: Botanica Ltd.

OUR GUESS IS that many readers have heard the genus name *Diaphananthe* but may have difficulty bringing a visual to mind. If you are familiar with a species in the genus, it is likely to be *Diaphananthe pellucida*, which happens to be the type species for the genus. We want to introduce you to an uncommon one: *Diaphananthe bidens*. As is our modus operandi, we have chosen an angraecoid, an orchid in the Angraecinae (the subtribe of the Vanda tribe that includes *Angraecum* and *Aerangis*, among many others).

If you have the space to allow *Dpthe. bidens* to grow to its full potential, you will be richly rewarded. Smaller plants are lovely too; they simply lack the grand presence of a mature specimen. We have allowed one plant to become quite substantial. It has an elegant draping quality that inspired us to give it the clonal name 'Big Sky Robe'. The "robe" effect of the leaves is due to them being regularly spaced in two rows, with a twist at their bases so that they lie in one plane (Photo 9). It is a beautiful effect and we love its exotic appearance. Although it is not as flashy as a jewel orchid, it has outstanding foliage, both in leaf shape and venation, which almost appears tessellated. It could well be considered for the "orchids grown for their foliage" category at an orchid show. *Diaphananthe bidens* is not known for ostentatious flowers, but when looking through images, both ours and those on the internet, we found many to be rather disappointing. Honestly, this is a tough plant to photograph well, which is, in part, because the flowers are typically well-hidden by the foliage — almost as if the leaves wish to keep the flowers a secret. They have interesting delicate small flowers that are best seen from the side or from beneath the plant. We wish we had started by hanging our plant higher, but we did not have a full realization of its growth habit and how strong a grower it is. We highly recommend placing it in a spot where you will be able to both see and smell the flowers — hopefully without getting down in the gravel or by climbing a ladder! We have read that it has a pleasant fragrance (most angraecoids do) but have not verified this personally.

What else makes it noteworthy? It has life-saving potential beyond the psychological lift we get from many of our orchids. In researching information about this beautiful plant, we discovered a study done in 2012 at the University of Nigeria on *Dpthe. bidens* called "Antihyperglycemic effects of the methanol leaf extract of



BRENDA OVIATT

2

## Sidebar 1. *Diaphananthe* Species Currently Recognized by the World Checklist of Selected Plant Families

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| <i>Diaphananthe bidens</i>                           | <i>Diaphananthe millarii</i>         |
| <i>Diaphananthe bueae</i>                            | <i>Diaphananthe odoratissima</i>     |
| <i>Diaphananthe ceriflora</i>                        | <i>Diaphananthe pellucida</i>        |
| <i>Diaphananthe divitiflora</i>                      | <i>Diaphananthe plehniana</i>        |
| <i>Diaphananthe dorotheae</i>                        | <i>Diaphananthe rohrii</i>           |
| <i>Diaphananthe eggelingii</i>                       | <i>Diaphananthe sanfordiana</i>      |
| <i>Diaphananthe fragrantissima</i>                   | <i>Diaphananthe sarcophylla</i>      |
| <i>Diaphananthe gabonensis</i>                       | <i>Diaphananthe sarcorhynchoides</i> |
| <i>Diaphananthe garayana</i>                         | <i>Diaphananthe spiralis</i>         |
| <i>Diaphananthe ichneumonea</i>                      | <i>Diaphananthe subclavata</i>       |
| <i>Diaphananthe lanceolata</i>                       | <i>Diaphananthe suborbicularis</i>   |
| <i>Diaphananthe lecomtei</i> var. <i>lecomtei</i>    | <i>Diaphananthe thomensis</i>        |
| <i>Diaphananthe lecomtei</i> var. <i>tenuicalcar</i> | <i>Diaphananthe trigonopetala</i>    |
| <i>Diaphananthe letouzeyi</i>                        | <i>Diaphananthe vagans</i>           |
| <i>Diaphananthe liae</i>                             | <i>Diaphananthe vandiformis</i>      |
| <i>Diaphananthe lorifolia</i>                        | <i>Diaphananthe vesicata</i>         |
|  | <i>Diaphananthe welwitschii</i>      |

*Diaphananthe bidens* in normoglycemic and streptozotocin-induced hyperglycemic rats” (Ottah 2012). The study evaluated the folkloric use of extract from the leaves for treating diabetes, and it was confirmed that they do indeed possess antihyperglycemic activity. As a natural medication used traditionally to treat diabetes, it was shown to be effective on diabetes-induced rats, which is yet another good reason on our list to save plants from extinction!

There have been no hybrids registered using *Dpthe. bidens*. In fact, there is only one hybrid recorded using any *Diaphananthe*, which is *Diaphanangis Kotschyida* (*Dpthe. pellucida* × *Aerangis kotschyana*) registered by Fred Hillerman. The species *Dpthe. bidens* has received two AOS awards: a CBR (Certificate of Botanical Recognition) and a CHM (Certificate of Horticultural Merit) and the award photos do NOT do it justice! The write-ups for these awards were uncharacteristically brief, but it is interesting to note that the flowers were described as being translucent peach with crystalline texture and a lip like a miniature version of *Angraecum magdalenae*. Some had up to 30 flowers per inflorescence, and were branched and reblooming on old nodes. For us, this mention about reblooming on old nodes was particularly interesting. We had noticed it, but it is a feature not mentioned in descriptions of the species. Look at the detail of Keith Mead’s plant (Photo 4) and you can easily see how it has bloomed repeatedly from the same node, which is certainly a significant attribute.

We acquired seedlings of *Dpthe. bidens* from Isobyl la Croix of Uzumara Orchids in 2003. As she stated in her book, “African Orchids in the Wild and in Cultivation” (1997), “Perhaps rather surprisingly, *Diaphananthe* is the largest genus of African angraecoid orchid” (p. 201). Since that time, however, roughly half of the species have been transferred to the genus *Rhipidoglossom* and two to the genus *Margelliantha*. As with all things orchid, there is disagreement as to current “valid” names. That said, the World Checklist of Selected Plant Families (Kew Royal Botanic Gardens 2017) recognizes 32 species of *Diaphananthe* and all are endemic to Sub-Saharan Africa (see Sidebar 1), and surprisingly few can be found in cultivation. One feature of all of them (even those transferred out of the genus) and what determined the genus name, *Diaphananthe*, is their transparent flowers — the genus name is derived

## Sidebar 2. *Diaphananthe bidens* Synonyms

**Homotypic** (different genus names but the same species name) versus **Heterotypic** (both genus and species names are different).

*Angorchis ashantensis*  
*Angorchis monodon*  
*Angorchis papagayi*  
*Angraecum acutum*  
*Angraecum ashantense*  
*Angraecum bakeri*  
**Angraecum bidens**  
*Angraecum monodo*  
*Angraecum subfalCIFolium*  
*Diaphananthe acuta*  
*Diaphananthe ashantensis*  
*Diaphananthe monodon*  
*Diaphananthe mystacidioides*  
*Diaphananthe papagayi*

*Diaphananthe producta*  
*Diaphananthe subfalCIFolia*  
**Limodorum bidens**  
*Listrostachys acuta*  
*Listrostachys ashantensis*  
*Listrostachys bakeri*  
**Listrostachys bidens**  
*Listrostachys longissima*  
*Listrostachys monodon*  
*Listrostachys mystacidioides*  
*Listrostachys papagayi*  
*Mystacidium duemmerianum*  
*Mystacidium productum*



BRENDA OVIATT

from the Greek words “diaphanes” (transparent) and “anthos” (flower).

We appreciate knowing some background regarding the discovery and naming of our orchids, and, like many, this one has an interesting history. When you see its name in taxonomic form it is rather long: *Diaphananthe bidens* (Afzel. ex Sw.) Schltr., *Orchideen Beschreib. Kult. Zücht.*: 593 (1914). What does that all mean? Well, *Dpthe. bidens* was first described and published by Olof Swartz [Sw.], a Swedish naturalist/botanist (1760–1818), based on a prior description by Adam Afzelius [Afzel.], also a Swedish botanist (1750–1837), who likely collected it when he worked for The Sierra Leone Company. But it was Friedrich Richard Rudolf Schlechter [Schltr.], the German taxonomist, botanist and author (1872–1925), who reclassified it and published it in his journal, “Orchids, Their Description, Culture and Breeding: Handbook for Orchid Lovers, Breeders and Botanists” (*Orchideen Beschreib. Kult. Zücht.*) on page 593 in 1914. Whew! So much to learn from a few notes behind the orchid’s name!

Beyond that, it can be interesting and a bit confusing when a single species has been known by so many different names. *Diaphananthe bidens* has 27 synonyms. Three names are homotypic synonyms and 24 are heterotypic synonyms (see Sidebar 2). This can create a lot of confusion in the commercial trade when tags are not updated, though this species is rather obscure and we have not seen it be an issue. However, with many other species it can be confusing to the collector when the same species is sold under many different names (e.g., the *Cattleya*, *Laelia*, *Hadrolaelia*, *Sophronitis*, *Hoffmannseggella* conundrum). It is good to be aware of the taxonomic name changes that affect your orchid: same orchid, different name(s).

In epiphytic orchids, roots serve as the mechanical attachment, holding the plant in its growing environment. They take in moisture and nutrients for the plant, their appearance gives an indication of overall health and their structure can tell you a lot about what the orchid wants. We have noticed that *Dpthe. bidens* has an interesting occurrence on its roots: sections that become fuzzy for at least part of the year. They look a bit like a *Vanilla* root when it reaches medium and sprouts fuzz. We assume it is related to humidity levels, but have not found anything written about it. *Diaphananthe bidens* grows on trees and large branches in rainforests and has been found growing in



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Angola, Benin, Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Republic of Côte d’Ivoire, Rwanda, Sierra Leone, Togo and Uganda at elevations of 3,600–4,300 feet (1,100–1,300 m).

**CULTURE** We have found *Dpthe. bidens* to be a very sturdy, easy-to-grow orchid that has never been bothered by insect pests. We received a very welcome email and photo from Keith Mead of Albuquerque, New Mexico, who purchased the lone *Dpthe. bidens* that Brenda had taken when she spoke there in 2013. As he described it, he bought it as a last minute purchase as she was packing up after the meeting. He did not want her to have to take it home. It has roughly quadrupled in size since then. Keith’s plant is a great example of a well-bloomed plant! Although we are both growing and blooming our plants well, it is interesting to see how differently we grow them and see what a versatile plant this is.

**WATER AND FERTILIZER** We have grown *Dpthe. bidens* in pots, on mounts and loose in the air. They adore being loose, provided there is ample humidity and regular watering. Keith has his in a pot with no medium and the majority of its roots are hanging in the air. His relative humidity is a constant 50–60 percent, while ours varies a great deal more than that. One thing we have in common is daily watering in the summer and weekly watering in the winter. Keith’s plant gets fertilized with K-Lite (when he thinks of it), while we are a little more regular about it. Keep in mind when growing a plant with primarily aerial roots that they provide the nutrients to the plant so when watering, make sure to moisten them with



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- [3] *Diaphananthe bidens* ‘Big Sky Robe’. Somewhere under there is a tree fern plaque that we started our seedling on. Most of the plant hangs in the air, occasionally reaching a root out to a neighbor, much like it would in nature. Grower: Botanica, Ltd.
- [4] *Diaphananthe bidens* will bloom repeatedly from the same node. Notice both spent and active inflorescences hanging together. Grower: Keith Mead.
- [5] An excellent close-up of the flowers that even shows their nectaries.

fertilized water. We water using reverse osmosis water, with ½-strength fertilizer and periodically flush with clean water. We rotate fertilizer formulas and always provide micronutrients.

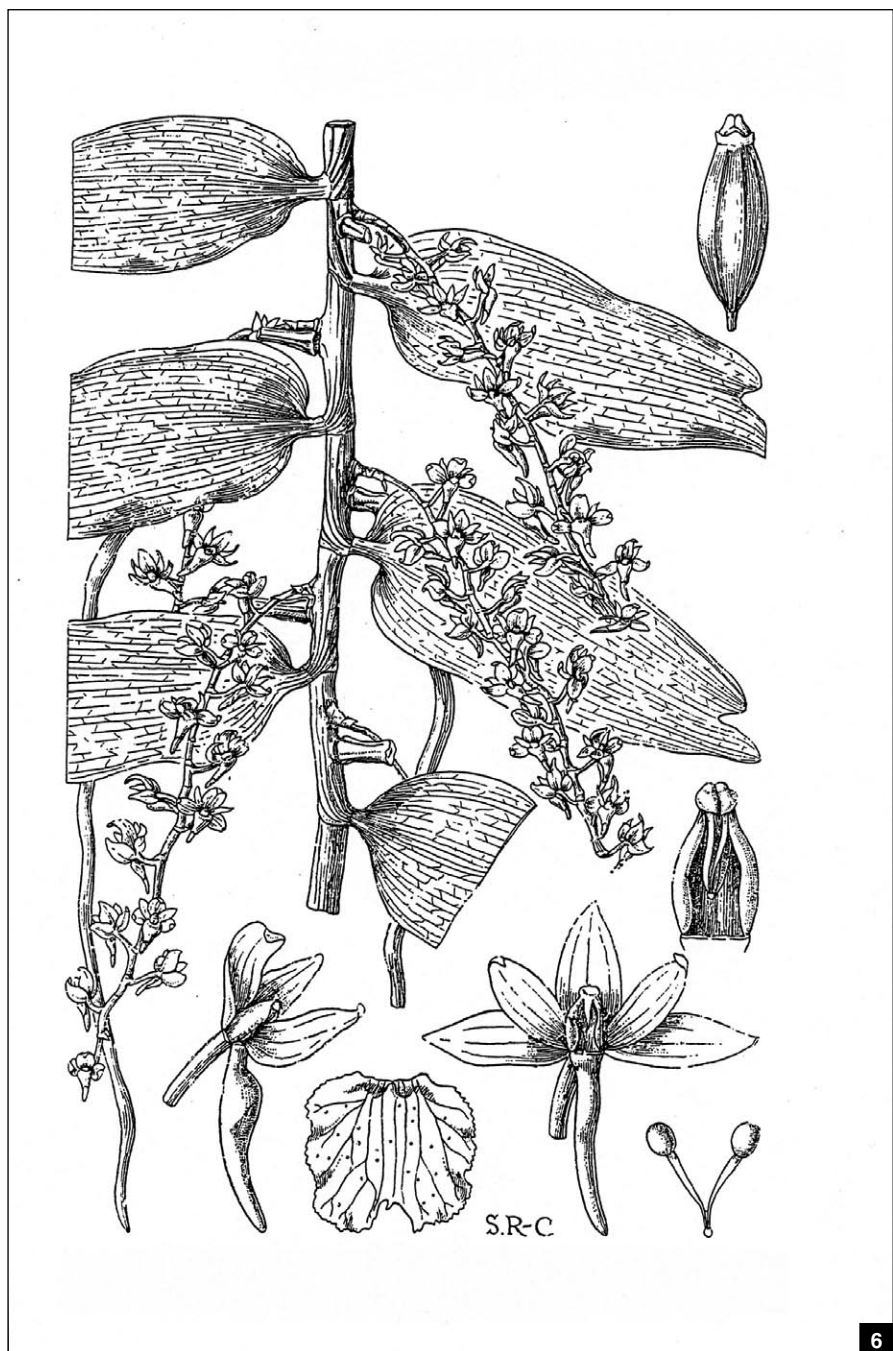
**TEMPERATURE** As we write this in January 2017, we have been experiencing weeks of uncommonly cold weather, setting a record of being the third coldest winter on record for our area. In the last month we have had four days above freezing 32 F (0 C) and nine nights below 0 F (-17.8 C). It is challenging to maintain good growing conditions for orchids in these temperatures and some of our angraecoids suffer greatly during these times, but not *Dpthe. bidens*! It is a strong, durable plant. Our large plant (Photo 3) gets a cool nighttime temperature of 53 F (11.7 C) near the gravel and a bit warmer up higher. Our maximum summer daytime highs reach 96 F (35.5 C). Keith's growing area also has winter lows in the 50s F (10–15.5 C) and summer highs reach 100 F (37.8 C) for short periods.

**LIGHT** *Diaphananthe bidens* can be grown in a wide variety of light conditions. The light level you provide can yield a dramatic difference in the appearance of the foliage, though they can bloom well in different light levels. We grow ours in lower light. Outside in the bright winter sun, we registered 8,670 footcandles, but the *Dpthe. bidens* is getting just 300 footcandles indoors. Our plants have thick, dark green leaves. Keith grows his hanging in a west-facing plant room in much brighter light and blooms his beautifully. The foliage of his plant is lighter green with even more visible venation.

**HOPE FOR SURVIVAL** *Diaphananthe bidens* has not yet been assessed by the "IUCN Red List of Threatened Species" (International Union for Conservation of Nature 2017). There is little information available as to its status in situ. However, four species of *Diaphananthe* are on the list ranging from "vulnerable" to "critically endangered." It seems to us that keeping species safe and protected should be a concern to all humanity, if for no other reason than to remind yourself that there may be a cure to *your* disease in one of those plants! We encourage every orchid grower to choose a threatened orchid species (there are plenty to choose from) and work to keep it alive and protected, both in collections and in its native habitat. And encourage others to do the same.

**Acknowledgments**

Thanks to Keith Mead who sent us a photo of the plant he bought from us,



and who is blooming his plant so well it inspired us to write about the species. Thanks to Ron McHatton (who has a gazillion orchid friends) who contacted Rudolf Jenny of The Swiss Orchid Foundation and procured a great close-up flower photograph and the illustration we were finding impossible to track down. We really appreciate the use of the close-up photo provided by Frédéric Debruille. As always, our appreciation goes out to Julian Shaw (Registrar, The Royal Horticultural Society) and Marion Allen (the Rocky Mountain Judging Center) for their continued research on each species we write about. We also appreciate our

- [6] A beautifully illustrated *Diaphananthe bidens* by Stella Ross-Craig for the *Flora of West Tropical Africa*. Courtesy of Rudolph Jenny.
- [7] *Diaphananthe bidens* roots will sometimes form fuzz for part of the year.
- [8] Look at all those flowers! Grower: Keith Mead.
- [9] *Diaphananthe bidens* has beautiful foliage. This photo shows a plant grown in low light levels (deep green leaves), with the prominent leaf venation and twisted leaf bases that place them all on one plane.

personal communication with Isobyl la Croix and consider ourselves lucky to have so many wonderful angraecoids from her.

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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 have been growing orchids together for 33 years and in that time have grown in many settings. For the last 13 years, their orchid growing has focused on the ex situ propagation of endangered angraecoids and the education of hobbyists and growers. (www.botanicaltd.com).*



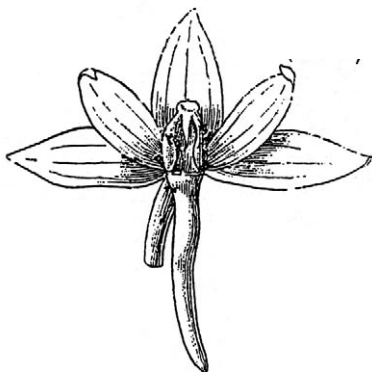
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7



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8



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9