COLLECTOR'S ITEM

Angraecum mahavavense

Often Wanted; Seldom Seen

By Brenda Oviatt and Bill Nerison
Photographs by Brenda Oviatt; grower: Botanica Ltd.

ANGRAECUM MAHAVAVENSE IS a lovely small orchid from Madagascar that we find brings a smile to the face of anyone who sees it in bloom. A blooming plant is only 5–7 inches (12–18 cm) across, and older plants can produce several inflorescences, each with 3–5 crystalline white flowers. We cannot quite explain it, but honestly think most orchid growers understand that feeling of having an orchid you just enjoy looking at. People who look at angraecums and just see white flowers may not understand it, but we see this delightful species as yet another variation of a perfect life form.

Brenda Oviatt and Bill Nerison

Sometimes, when doing research and trying to learn about a new species, or a new acquisition at least, we end up with as many questions as answers; such is the case with *Angcm. mahavavense*. There are interesting time gaps, inaccurate collection notes, confusion with other species, etc. We have tried in this writing to organize and make sense of this special plant's history.

Is this a plant you have seen or heard of? Not likely. It is extremely uncommon to find for sale, short of importing it from Madagascar. In *A Cultural Manual for Angraecoid Orchid Growers*, Hillerman lists sources of supply for angraecoids at the time (1992) and states that "if you want to live dangerously" you can also consider importing them from Madagascar. This has not changed. Importing is challenging — with dangers to the life of the plant and to the pocketbook! *An Introduction to the Cultivated Angraecoid Orchids of Madagascar* (Hillerman and Holst 1986) states that "Only two plants have been received from the island...which came from the supplier marked 'very rare species with beautiful flowers like a bunch of grapes, as nice as *leonis*.'" All their references to *Angcm. mahavavense* were based on just two collected plants. Hillerman expressed his desire to use it in hybridization; "...one could speculate that a cross between this species and *Angraecum sesquipedale* might produce an ideal offspring — hopefully much smaller in size than *Angraecum sesquipedale* but retaining the multifloral spike and large flowers. This is definitely a species worth preserving." We wonder then, if Hillerman wrote this in 1986, what happened? He was a major hybridizer of angraecums (and there have been others), yet Julian Shaw of the Royal Horticultural Society reports that no hybrids have ever been registered using it as a parent. Additionally, there is just a single AOS award for this species, a Certificate of Horticultural Merit, with a special note indicating "it was recognized for its compact growth habit." This is just one of many small angraecums that have great potential for orchid collectors because of its size, floriferousness, fragrance, those amazing long spurs and relative ease of culture when plants are mature. Shouldn't it be as "common" as *leonis*, *magdalenae*, and *sesquipedale*?

So, consider that it has been 80 years since the "discovery" of *Angraecum mahavavense* and 32 years since Fred Hillerman wrote about it, yet it is still extremely uncommon. Even now, in 2018, we feel like we are in the same position as Hillerman was in the 1980s; we have just a few plants, all imported from Madagascar. If they were rare in the 1980s, what is their status now? In fact, the IUCN Red List of Threatened Species lists the species as "critically endangered," and its population trend is decreasing. Our goal is to reproduce a select group of orchids ex situ. Often the only way to acquire the plants to breed with is to import them directly from their native country — in this case, Madagascar. Importing rare collected orchids is a fine-edged sword, and quite a dilemma. When we got our first plants from Madagascar (a group of five) we found they were not all the same species. The foliage was nearly identical, but the roots were different and the flowers were different as well. We imported more, and knew to ask for the "smooth-rooted" ones, as they had a much greater chance

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[1] *Angraecum mahavavense*

[2] *Angraecum mahavavense* is a small plant, often considered a stemless epiphyte with leaves that are mildly keeled in the middle portion to strongly V-shaped toward the base; tips are very slightly bilobed.

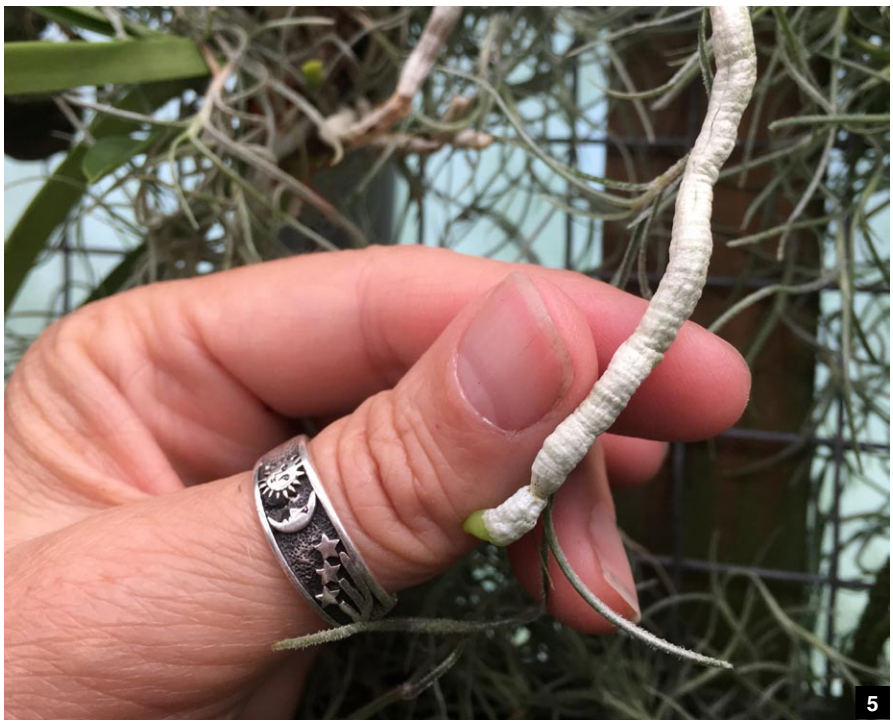
[3] Some descriptions have the flower labeled "white," others as "white lip with greenish-tinted sepals and petals." There is a variance in photographs we have found that suggests that there is some confusion or natural variation in the color of the flowers.

[4] Fred Hillerman noted that the flower buds turn "quite yellowish," but that this color is lost as they open.

of actually being *Angcm*. *mahavavense*. The "bumpy" rooted ones we received consistently had larger, single-flowered inflorescences. *Angraecum mahavavense* roots are smoother, though the surface is uneven and has ridges and lengthwise indentations, making them rather unusual looking.

This is a species we have really been striving to "get into production," as the big growers say. *Angraecum mahavavense*, like many of the angraecoids, has presented many challenges along the way. We have pollinated it, gotten seed capsules with viable seed, had moderate germination and then came problems. In flask, these have "brittle" roots that often break as you move them out of the soft medium (not to mention putting them into fresh medium). There has also been great die back with each replate. Implementing suggestions by Mike Bleitz (Exotic Orchids of Maui) has made a huge difference, but these have been *very* slow growing in flask. They have also been difficult to stabilize upon removal from flask; we have not yet found what pleases them but suspect timing is ultracritical. Some of our experiences with these imported plants remind us of the introduction of *Phragmipedium besseae* in the 1980s. People were spending hundreds, if not thousands, of dollars on them, and the rate of reproduction seemed rather dismal in the beginning. But with a flower so striking, orchidists could not rest, and with each successive generation, the rate of production increased, many hybrids were made and it became rather commonplace. Plants a couple of generations removed from their native habitat just seemed hardier than the freshly imported ones. We suspect this would have happened decades ago if *Angraecum mahavavense* bore purple flowers. Out of all the exceptional species of *Angraecum*, a small percentage of the species are commercially available to orchidists.

There is great diversity within the 200+ species of *Angraecum* and it was divided into 19 sections by Dr. Leslie A. Garay (1924–2016) in 1973 based on his review of 550 binomials in the genus. *Angraecum mahavavense* has been shuffled between sections. Garay placed it in the section *Humblotiangraecum*, and in *Angraecoid Orchids Species from the African Region* Stewart et al. (2006) still placed it there with the caveat that "it does not fit this description well, or indeed that of any other section..." but kept it listed there until "further evidence is available to suggest where [it] might be placed more appropriately." Cribb and Hermans (2009) placed it in the section *Angraecum* in the *Field Guide to the Orchids of Madagascar*, and this was Perrier de la Bâthie's original placement as well. We are not taxonomists, but this does not quite fit in our view of that section (see sidebar). We think there are several unusual angraecums in a class of their own; clearly more work is required for this genus. Luckily, wherever it is placed, there are no synonyms for this species to cause even further confusion.



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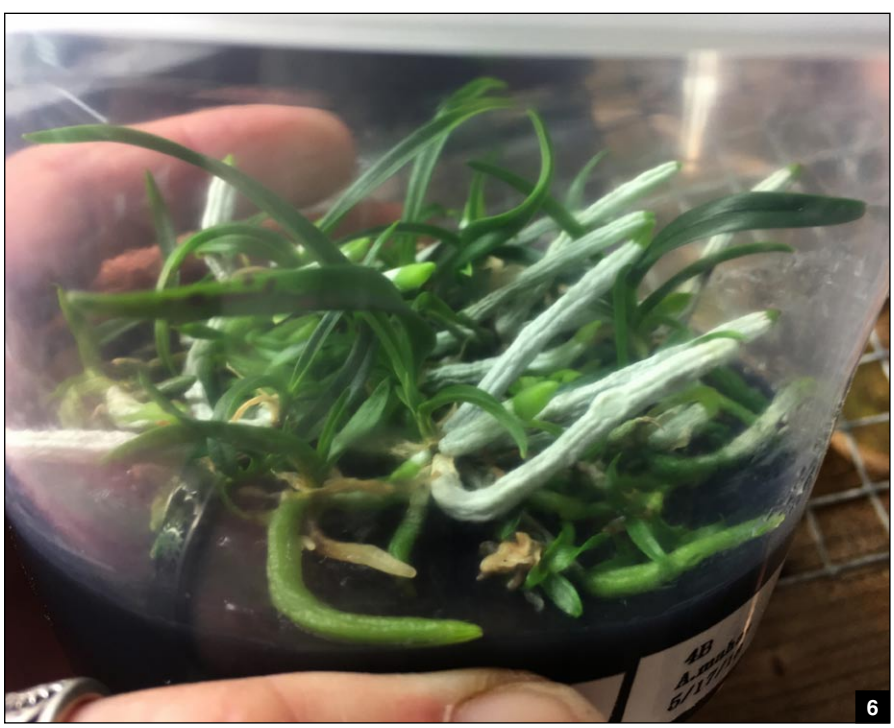

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[5] *Angraecum mahavavense* has roots with a rather unusual uneven surface.

[6] Most roots of *Angraecum mahavavense* avoid going into the soft flasking media.

Angraecum mahavavense was formally written about and published in *Notulae Systematicae* (Paris) in 1938 by Henri Alfred Perrier de la Bâthie, a distinguished French scholar of the flora of Madagascar. None of *our* older printed literature refers to it at all. There seems to

be a time gap between its discovery and any further interest in it (until Hillerman and Holst), which we find a shame. *Angraecum mahavavense* is endemic to a rather small area of northwestern Madagascar. Its name is the Latinized form of the Mahavavy River, which flows through the region in which *Angraecum mahavavense* grows. The river's source is at Maromokotra peak in the Tsaratanana Massif, and it flows north to the Indian Ocean. In *Notulae Systematicae* the description of the locale of the first collected plant is "Sambirano (on the boundaries of the domain/estate): Mount Ambohipiraka Mountain, near Ambilobe, in the basin of the north Mahavavy River, October 1932." We find it interesting to note that the original plant was collected in 1932, but nothing was published until 1938 — *another* time gap for this species. As we researched herbarium information on this species (https://wcsp.science.kew.org/ and https://www.gbif.org/), we came across several discrepancies that added to our list of questions about the species and its origin. Clearly it was found in the extreme northwestern area of Madagascar (having been named for the river there). But several herbarium specimens of *Angraecum mahavavense* are labeled as being collected at Sakaraha and Zombitze — both in the southwest part of the island — climatically very different. A clerical error? A species that can survive distinctly different habitats? Two varieties of a single species? We have not found the answer. *Angraecum mahavavense* is most commonly described as being endemic to the Northwest, there it is found in humid, highland, shady forests of the Sambirano region, often on the trunks of trees (records indicate herbarium specimens removed at 16½ feet (5 m) above ground on large trees) at 2,625 feet (800 m) elevation. *Angraecum mahavavense* is recorded near Antsiranana. We checked the weather data for this area and found that the average diurnal temperature changes throughout the year range from 15 to 18 F (about 8 C). Our greenhouse in Montana frequently has greater changes than this. Often this diurnal change can be very important to the success and blooming of orchids. Do you have a good feel for the temperatures your species orchids are experiencing, diurnal temperature change or what their native habitat provides?

CULTURE We do not recommend *Angraecum mahavavense*, or any other imported orchid, for novice growers. You should have some experience with orchids, especially with the more "standard fare," domestically grown angraecums, before trying this one.

As with every article we write, in regard to culture, *our* times of greatest loss are either during our cold winters (and a budget limit on how much we can heat the greenhouse) or our hot summers (and the fact that we spend so much to heat the greenhouse during the winter we have a limit on money and equipment to cool it). As in nature, the times of extremes are often the times of greatest loss. This is a species that needs intermediate to warm conditions; 58 F (14 C) as an extreme winter low and 85 F (29 C) as a summer daytime high. Ours get pushed beyond those extremes sometimes.

So far, we have grown our plants mounted, using cork with a coconut husk fiber moisture pad. It has worked well, but with many angraecums pots will work just as well, provided they are allowed to dry completely between waterings. Overwatering of the potted angraecums is usually the enemy — as is the case with many potted orchids. We plan to test a few plants using unglazed terracotta pots and Orchiata. We believe it is best to use the cleanest water possible (reverse-osmosis water is ideal) and moderate feeding. We use half-strength fertilizer with each watering, rotating between formulations and always including micronutrients.

As we write this, it is lunchtime on what would be a sunny August day… except for all the smoke that has settled in the valley from forest fires. Our light meter reads 7,930 foot-candles (f.c.) on the patio in front of the greenhouse. We have white shade cloth (60%) on the greenhouse, and at the two locations where we grow *Angcm. mahavense*, the readings are 380 f.c. and 460 f.c. This is low for these areas — especially this time of year. Considering *Angcm. mahavense* are described as growing in "deep shade," these readings, though low, may be fine. Based on past light readings at the same locations they should be able to do well up to 1,000 f.c. Both nature and greenhouses sometimes present situations beyond our control that affect our orchids.

HOPE FOR SURVIVAL We have spent time discussing this special species while sitting on the banks of the Blackfoot River in western Montana. We consider ourselves fortunate to live in a low-population area that is relatively clean and undamaged. Yet even here, as we enjoy our time, we clean up seemingly endless garbage, left by others who enjoyed but chose not to preserve. There aren't epiphytic orchids hanging from the trees around us (though there are terrestrial ones close by) and it is certainly not a tropical environment, but we feel that EVERY piece of nature is worth protecting. Look around yourself; pick up a piece of garbage, compost, become a recycler and reuser. Make a positive difference in the world. Make a lasting life choice to preserve our environment, thereby protecting the plants and creatures in it. Humans seem to be unique in their disregard for their world and for its safety. Become an orchid grower who makes a difference in the world. Saving species is

Section *Humblotiangraecum* vs. Section *Angraecum*

Section *Humblotiangraecum*: Medium to large plants with stems that are scarcely developed, short or of medium length; leaves fleshy or leathery, sometimes iridiform; inflorescences few-flowered; flowers white or tinged with green or orange, large, fleshy; pedicel and ovary often winged; spur emerging from a broad mouth, elongate, slender.

Species in this section: *leonis*, *magdalenae* and *viguieri* with disagreement on *mahavavense*, *potamophilum* and *praestans*.

Section *Angraecum*: Large plants with leafy stems; stem elongate, bearing thick and fleshy leaves, with bases overlapping on the stems. Axillary inflorescences usually several- to many-flowered, never secund. Flowers white or greenish white, fleshy; spur elongate, filiform.

Species in this section: *crassum*, *eburnum*, *longicalcar*, *protensum*, *serpens*, *sesquipedale* and *sororium*, with disagreement on *humberti*.

just one part of an overall life philosophy of ours, and we endeavor to influence other orchid enthusiasts.

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Acknowledgments

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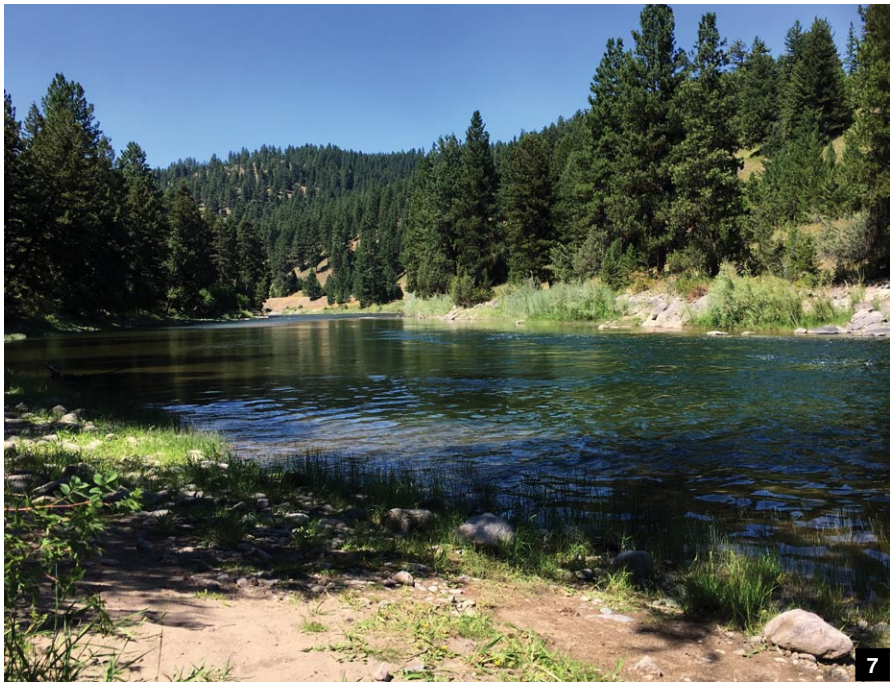
— Brenda Oviatt is an artist and Bill Nerison is an architect. They live on the Clark Fork River in Missoula, Montana (a corner of paradise) with their daughter Marisa, son Tristan and an assortment of animals. They've been growing orchids together for 34 years and in that time have grown in many settings. 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] The banks of the Blackfoot River in Montana near the Oviatt-Nerison nursery.