

A Ghostly Pursuit

Developing a Passion for the Ghost Orchid

BY KEITH DAVIS

IN AUTUMN 1980, THIS MISPLACED bachelor cruised down one street after another, looking for yard sales in the uppercrust neighborhoods of Corpus Christi. Sitting barely 6 inches (15 cm) off the pavement in my 1968 Triumph GT-6 named “Red,” I saw hordes of people converging on the front lawn of a stately southern Texas home. This particular sale had folding tables packed with every imaginable dust collector known to man as well as rack after rack stocked with once-stylish clothes. The 100-plus people crowding the yard were gathering around a large section that had loosely organized rows of books and magazines. The left side of the yard was completely covered with hundreds of odd-looking plants. Always the book fancier, I gravitated toward the “lawnbrary” to see what bargains could be had. Many of the magazines and books were totally unfamiliar, with titles such as *Bulletin*, *Orchid Digest*, *Awards Quarterly*. There were stacks of catalogs with names like Jones & Scully, Stewart, Armacost, Alberts & Merkel, Hausermann and Vacherrot and Leucouffle. Why in the world did so many people want these? Even to this college graduate of forestry, ornamental horticulture and fruit production, these publications were unfamiliar. As the crowd frenzy intensified, I spied a large book right at my feet. It had a familiar title, *Exotica*. I leaned over to pick up this pristine volume, thinking it would be nice to have as a reference for my fledgling high school horticulture class. As I grabbed the 6-inch- (15-cm-) thick book, I was tackled by a portly woman who tried to rip the *Exotica* out of my hands. I spotted the book’s price of \$20 and held on even tighter, knowing it normally sold for well over \$100. Clutching the book, I took off in the direction of the money table as if headed toward the end zone for the

winning touchdown of the Super Bowl, then carried my 10-pound (4.5-kg) prize to Red.

Locking the book in the car, I decided to go back to look at the strange plants that filled such a huge portion of the lawn. Some plants had tall canes, sort of bamboolike, some had large fan-shaped leaves not unlike a palm seedling, some had flat leaves like two ranks of beaver tails, and others had fat clublike stems with one or two large stiff leaves on top. Many were in large 8- to 12-inch (20- to 30-cm) clay pots, while others were in baskets made of wood. Strangest of all were the ones mounted on cork bark and something that looked to me like little bits of black sticks glued together. Each plant had one or more name tags. Meaningless writing on the tags baffled me. The names, such as *Cattlianthe* (syn. *Laeliocattleya*) Molly Tyler (Ctt. [syn. Lc.] Mrs. W.N. Elkins × *C. Leda*), *Zelenkoa* (syn. *Oncidium*) *onusta*, *Phalaenopsis bellina* (syn. *violacea*), *Lycaste skinneri* and *Dendrobium spectabile*, must have been the plants’ pet names like my car named Red. Other tags had secret codes, such as “Pc 2 Joe”, “Hld 4 Mac” and “FCC/AOS.” Every one of the perhaps 1,000 plants had the uni-price of \$1. I could get a dozen of these beautiful but odd specimen plants into old Red if I drove with the rear hatch open, put plants on the seat beside me, sat on the *Exotica*, and held one plant in my lap. As I drove

[1] The award-winning flower of *Dendrophylax lindenii* ‘Glade Spirit’, FCC/AOS. “The clonal name comes from my imagination of the ‘ghost’ or ‘spirit’ and one of places they can be found ... the Everglades ... spirit of the Glades ... or Glade Spirit,” says the author. Grower of all plants shown in article: Keith Davis.



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4 miles (6.5 km) back to the school's greenhouse, I wondered if I would be able to identify my plants from my new book. I ignored strange stares from passing motorists as I drove down South Padre Island Drive with plants poking out the rear and both sides of old Red. Little did I realize that I had just taken the first step to becoming an orchid nut.

That was my first year out of college as a teacher of horticulture at W.B. Ray High School in Corpus Christi, Texas. Our new Atlas greenhouse was sparsely populated with plants, so these new monsters really made things look more official. Over the next few weeks, I learned from the *Exotica* that some of the gibberish on the tags was the genus and species of various orchids. The book said nothing about how to grow the plants and I knew that no plant could survive on cork bark or the plaque of little black sticks or in those wooden baskets. I ripped the plants off their mounts and put them in pots of the richest, darkest, organic soil that I could find. I was sure that any plant in such luxurious soil would explode in new growth and shower me with blooms. As you might guess, the only thing that exploded was rot, and lots of it. In just a few short weeks, all but one of those 12 plants had gone to compost heaven.

During the next few weeks, I met two wonderful people who helped change my life: Dr. C.L. (Sony) Norrell and Mrs. Rosa Mueller. Before long, I was an active member in local orchid, bromeliad, African violet, cactus and succulent and bonsai societies. Mueller took me to see her backyard collection of orchids and bromeliads. Norrell showed me how to divide a cattleya and interpret name tags. I went home with boxes of divisions that read like a who's-who list of heritage cattleyas. Strangely, Norrell wrote on his keeper plant tags things such as "Pc 2 Keith." Bingo! I realized that the person from whom I purchased those first 12 plants was not so crazy after all. The main thing I learned over the next few months from my many new society friends was how little I knew.

MY GHOSTLY PURSUIT Now, 28 years later, I am just as crazy as that person who once owned that orchid collection that sold for \$1 per plant. I wish I could have known him or her. Now, as an orchid collector, I bet nearly every single plant on that lawn had a

story to go with it; where it came from, what award it received, who wanted a division and who got a division and what divisions of it were traded for. If you really love your plants, there is a story behind each one. Out of the 12 plants I purchased that day, the only one that did not die from "death by dirt" was *Cattlianthe* Molly Tyler. That plant still thrives in my collection and blooms every Thanksgiving. I have wondered so many times what stories that owner could have shared. Now my plant has stories of its own.

Over the years as I refined my collection and skills as a grower, I realized that cork was indeed good for growing some orchids, that tree-fern plaques (the little black sticks) were perhaps even better, and that no epiphytic orchid should be grown in rich, black soil. I had also heard about the legendary ghost orchid. However, I never found a photograph, much less ran into a person who grew this mysterious plant. I falsely concluded that this plant, if it existed, was not a real orchid. The thought of an orchid with a flower that looked like a ghost kept me searching. One day while thumbing through a nonorchid magazine, I saw a painting of a flower suspended in mid air on a thin stalk. The bloom looked like a cross between an albino frog and a ghost. I could barely make out the caption at the bottom of the painting, but it read "Ghost Orchid." I wasn't sure if the painting was someone's imagination of what a ghost orchid should look like, or if the painting was from a real flower. It was intriguing and deepened my desire to know more about this plant.

Several years later, while visiting the McMillan Greenhouses on the campus of the University of North Carolina in Charlotte, I nearly fell over when I came face to face with a blooming plant that looked exactly like the painting I had seen in that magazine. I stood there studying that flower and every detail of the plant for 30 minutes. It really did have a ghostly look. I scrutinized every inch of the plant, but found no hint of a leaf. The roots were long and wiry, greenish silver in color, and there was a mound in the center from which all the roots originated. From this mound the threadlike stem came outward and arched over, suspending a single pure white bloom. The bloom looked like a frog's ghost with bowed legs, two sets

of wings, a green head with two red eyes, and a long arching tail. What in the world was Nature thinking when this thing was designed? At the time, I had several hundred orchids in my collection, mostly in the *Cattleya* alliance. I loved every plant, but this flower before me was more beautiful and mysterious than anything I had ever witnessed. I determined right then and there that I would find and learn how to grow this plant. Questioning the greenhouse curator, I was told that they had tried to grow the plants over many years, and this single plant was the only one that survived to bloom. The other note of interest was that of all the many orchid growers I knew, none had ever grown one. Something so beautiful would surely be of interest to orchid growers; we are always looking for the weird and wonderful. Somehow I knew this was not going to be an easy challenge.

My quest began by digging out every catalog I owned. Besides collecting orchids, I saved orchid catalogs and had hundreds of them. Most companies sold species by their Latin names, and I discovered that the plant I was looking for had undergone multiple name changes. I was taught in college that giving a Latin name to a plant was supposed to simplify and unify the naming process. But this orchid has had an identity crisis. With its uniqueness among flowering plants, the simple name of ghost orchid would let everyone know exactly what you are talking about. Taxonomists thought that was too easy though, so it has been assigned to the various genera of *Angraecum*, *Aeranthus*, *Polyrrhiza*, *Polyradicion*, and for now, *Dendrophylax*. After days of searching, I found that an orchid nursery named Oak Hill Gardens had seedlings at one time. I called, but they no longer offered them.

A few years later, I received their catalog and they had the plants listed again. I purchased several and they came attached to small pieces of cedar. The plants were small, no larger than 1½ inches (3.75 cm) in diameter, but the roots looked good and had new green tips. I mounted each plant on something different knowing from some sparse literature that the plants grew on limbs or on the side of tree trunks. I tried tree-fern plaque, cork, tree limbs, slabs of various woods, and one piece of mockernut hickory bark (*Carya tomentosa*). All the plants were



growing side by side in a fairly bright section of the greenhouse. I had them placed about 15 feet (4.5 m) from the evaporative cooling pads thinking they needed the higher humidity. I noticed that within a few months all the plants were trying to put out new roots, but only one plant was attaching its roots to the substrate on which it was mounted, that being the hickory bark. With the other plants' roots sticking out in the air, they dried out quickly and it was difficult to keep them hydrated. The plant with its roots firmly attaching to the hickory bark was better able to maintain hydration.

The mockernut hickory bark was something I discovered while cutting firewood to heat our home and greenhouse. I had cut some sections but left them out in the open for about a year. During that time, bugs had tunneled between the thick bark and the sap wood and when I later split the wood into sections for burning, I noticed the bark came off intact. Its rough texture, long furrows and patina of moss and lichens looked to me like a

haven for mounting orchids. The question was, how long would it last before rotting? I had used barks of various species before, but frequent watering and fertilizing turned them to mush in two or three years. As it turned out, the hickory bark was different. The wood itself is hard and dense, but it rots quickly because it has no natural preservatives. The bark has some sort of natural component that is not antagonistic to orchids yet is very resistant to fungi and bacteria action. As I write this, I have had various orchid species growing on hickory bark for more than 15 years and it still maintains its integrity. The mosses and lichens on the bark add to the enjoyment of the orchid. I have noticed that the roots dig down and often bury under the thin living patina. It absorbs moisture and holds it for hours longer than cork or other mounting substrate. As a result, none of the ghost orchid seedlings survived beyond the first year except the one on the hickory bark. Had I been able to possibly water all of them once every day or more, others may have survived. But

[2] Keith Davis with his plant of *Dlox lindenii* 'Glade Spirit', FCC/AOS, surrounded by part of his collection of several thousand cattleyas in his 36 × 96-foot (11 × 29-m) orchid greenhouse. Davis still cannot get over the fact that with his thousands of orchids, the plant that doesn't even grow leaves — the ghost orchid — receives an FCC.

it was just not possible with my collection of mostly cattleyas. I seldom water more than once or twice per week. That is not enough for the ghost orchids unless the roots can get moisture from elsewhere, such as the moss and lichen on the hickory bark. There are long periods of dry weather where they grow naturally. The plants survive because roots are buried in the moss and lichen on the host tree. I later discovered that this dry period is vital to getting the plants to bloom.

SUCCESS AT LAST After several years of prolific growing, the plant finally achieved the mound in the



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center that I had heard was necessary before they would bloom. But still, my plant would not flower. I was discussing this issue with a good friend of mine, Dr. Courtney Hackney, a native Floridian. He told me that in its natural habitat, there is usually a pronounced dry period for a couple of months preceding floral initiation. I was watering the plant along with all my other orchids and had not allowed this to happen. The following year, I hung the plant up higher so it would be less likely to get wet unless I purposely wanted it to. At the same time, I draped live Spanish moss over its roots to create a small microenvironment to keep the plant hydrated during the “drought” I was about to create. I watered it only about three times for the month of January and the same in February. In March, I resumed regular watering. By the end of March, I saw the first inflorescence emerge from the center of the mound. It was a painfully slow development, especially when I had waited so many years to witness this event in my own greenhouse. Finally around June 20, the bud started to crack open and things began to move quickly. I was amazed at how fast the parts were expanding.

The plant naturally displays the flower perfectly, presenting it for the world to see and of course for the pollinator to find it. At night, the bloom gives off a subtle yet intoxicating fragrance. I quickly took photographs galore, thinking that such a delicate flower would not last long in the heat and high humidity of that exceptionally hot June 2006. I was surprised and pleased that the bloom lasted for five weeks in perfect condition. When it finally says goodbye, it does so quickly. In less than six hours it goes from looking perfect to turning yellow and falling off. There was what appeared to be a second bud, but it never matured. On several inflorescences that I have observed since, the vestigial buds never developed. When a second bud flowers, it does so just a few days after the initial bloom opens. For judging purposes, I am not sure these vestigial buds should be counted.

After the dry treatment in January and February 2007, the plant produced two spikes that again developed ever so slowly. I decided it was time to name my plant, so with a sprinkle of water, I christened it *Dendrophylax lindenii* ‘Glade Spirit’. As the buds got closer to opening, I checked the calendar for the

[3] *Dendrophylax lindenii* in nature.

[4] A close-up view of *Dlax. lindenii* showing three old inflorescences from 2008 that produced four flowers. The white pointers show the base of three new spikes emerging early May 2009.

date of our next AOS judging in Greensboro, North Carolina. I was hoping that since the flowers seem to last a fairly long time in good condition, one of the two flowers might make it for judging. I also knew that in 2006, there had been a plant of this species awarded an 89-point AM/AOS in Florida. I decided that unless ‘Glade Spirit’ produced blooms larger than the AM-awarded plant there would be no need to take it in.

The first bloom opened on May 12, one week from judging. That allowed time for the bloom to fully expand for seven days. I just kept hoping and praying that nothing would happen to it for that one week — no bugs biting it, no moth pollinating it, no mouse eating it, and no Keith doing something stupid. Finally, Saturday morning of May 19 arrived. I went over to the greenhouse and the bloom looked so beautiful swaying gently in the breeze of the fans. I got my ruler out and

measured the best I could without touching the bloom. I was pleased with what I saw and decided to go for it. It took about an hour to carefully pack it for the 40-minute drive down the bouncy North Carolina roads to the judging center. I left 'Glade Spirit' and *Sophronitis* (syn. *Laelia*) *milleri* 'Carolina Ruby' with the judges and went about my regular Saturday chores. About mid afternoon, one of the judges called on my cell phone wanting to verify my mailing address. I knew they would not call unless there was some sort of award, but the judge sounded rather calm and said nothing about the award. I figured there was an award on the 'Carolina Ruby' (which there was, a HCC/AOS) because it was a rare plant and had such a good blooming. When I returned to the judging center, several judges immediately came up and congratulated me with big smiles on their faces. "Come here and look Keith, look at what you got, an FCC!" The judge that called me said it was hard to restrain herself on the phone, but wanted me to be surprised when I got back to the center and discovered the ghost orchid had received the award. I hardly could contain myself for the joy of having an orchid finally garner a coveted FCC/AOS. On the drive home, I am not sure my butt ever touched the van's seat. It was an unbelievable feeling of elation, joy and satisfaction to realize that it all started that crisp Saturday morning 28 years ago at a yard sale. Out of all the thousands of cattleyas I have grown and dozens shown for awards, I received my first FCC on a plant that doesn't even grow leaves. But that's okay with me. The ghostly pursuit was worth it.

Keith Davis was born in California but moved to Mexico with his missionary parents when he was eight years old. In 1974, he attended North Carolina State University where he obtained degrees in forestry, horticulture and agricultural education. After school, he moved to Corpus Christi, Texas, where he taught horticulture. After moving to Reidsville in 1984, he worked for North Carolina State University as the grounds and greenhouse superintendent at Chinqua-Penn Plantation and taught high school. In 1997, he and his wife, Dixie, adopted their only child, April. Keith then became a full-time stay-at-home dad but also continued part time with



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Chinqua-Penn. In August 2002, a disaster struck his orchid collection when the power went off at the greenhouse he was leasing. The temperature soared to over 140 F (60 C) and about 90 percent of his large collection of mainly Cattleya alliance orchids was lost. Thanks to many friends and the generosity of orchid growers, he is well on his way back to having a respectable collection. Much of Keith's knowledge comes from personal experience and visiting with

[5] The author's plant of *Dlax lindenii* 'Glade Spirit', FCC/AOS, measures 16 inches (40 cm) tall and 10 inches (25 cm) wide. Roots encircle the bark on the reverse side as well.

a host of orchid growers throughout the years. He enjoys the hunt for those rare and hard to find plants and gladly helps other hobbyists. 6767 Highway 29, Reidsville, North Carolina 27320 (e-mail dowiana51@gmail.com).