AS I SURVEY THE THOUSANDS OF paphiopedilums blooming in my greenhouses this spring, I marvel at how much has changed since I first came to Florida a little over 25 years ago. Then, anyone would have been hard pressed to find more than a couple of slipper orchids at any of our local orchid shows. The common belief was that it just wasn’t practical or possible to grow paphiopedilums well in Florida.

Entering the AOS judging program as a student judge in 1980, I traveled throughout the country to gain experience at orchid-show judging. It was then that I fell in love with paphiopedilums. This was the time when vinicolor paphiopedilums were arriving on the scene, taking the paphiopedilum world by storm and causing new excitement among orchid breeders worldwide. One of these vinicolors had a profound and lasting influence on my early hybridizing efforts: *Paphiopedilum* Vintner’s Treasure ‘Eureka’, AM/AOS (Kowloon × calltosum), given to me by Frank Hughes of Santa Cruz, California. I owe much of my success in paphiopedilum hybridizing to the generosity and mentoring bestowed in the early days by Hughes and, in later years, to Terry Root of The Orchid Zone in Moss Landing on Monterey Bay, California.

*Paphiopedilum* Vintner’s Treasure proved to be an excellent parent, producing many outstanding hybrids, the most significant to date being the highly decorated *Paphiopedilum* Satchel Paige (Vintner’s Treasure ‘Eureka’, AM/AOS × wardii), which received the American Orchid Society’s Award of Quality and has been recognized internationally, with many cultivars receiving quality awards. In addition to outstanding flower quality, virtually all cultivars exhibit extreme vigor in excess of either parent. These qualities are readily passed to its progeny, making *Paph.* Satchel Paige a fantastic parent. Among the best of...
HYBRIDIZING

Over the last 25-plus years, I have sought out the best cultivars to use for breeding. As Hughes told me early on, “You only breed the best to the best.” By adhering strictly to this advice we have, in a relatively short time, improved the quality of many *Paphiopedilum* species to a level never imagined just a few short years ago.

When paphiopedilums first caught my attention in the early 1980s, I developed a special interest in the brachypetalums, especially *Paphiopedilum godefroyae* var. *leucochilum*. When news of several good collections of var. *leucochilum* in Thailand caught my attention, I asked Robert Fuchs of Homestead, Florida, if he would find some plants for me on one of his trips there. He agreed, and upon returning from his next trip, presented me with seven var. *leucochilum* specimens. Five generations later, never forgetting Hughes’ advice, some of the finest plants of *Paph. godefroyae* var. *leucochilum* have emerged, with significantly improved size, substance, color and form.

My new line breeding of *Paphiopedilum lowii* was produced by applying much the same formula. The seedlings from this cross (‘Krull-Smith’, AM/AOS × ‘Super Fly’, AM/AOS) recently received an Award of Quality and more than 12 quality awards. By selecting only the best of the seedlings from each subsequent generation, we see continual improvement in size, shape, flower count and vigor.

Terry Root provided one of the most dramatic examples of species improvement with his mating of *Paphiopedilum rothschildianum* ‘Rex’, FCC/AOS, to another outstanding *Paph. rothschildianum* cultivar, ‘Mont Millais’, FCC/AOS. This grex received an Award of Quality, plus many FCCs and AMs over the past five years. In addition to improved characteristics such as those previously mentioned for other species, this grex of *Paph. rothschildianum* produced many cultivars that reached blooming stage several years earlier than what is considered normal for this species.
I believe these new improved cultivars of species will create a new level of hybrids, redefining many of the standards set in the past. *Paphiopedilum rothschildianum* ‘Crystelle’, FCC/AOS, which I purchased from Root in 2001, was crossed with *Paphiopedilum* Double Trix (S. Gratrix × Double Shot) hoping to increase size and improve the form of hybrids using brachypetalums and *Paph. rothschildianum*. The first seedling flowered only three years out of flask. I believe this cross achieves a new standard for this type of hybrid, as this first-bloom seedling — the first of the cross to flower — received an Award of Merit from the American Orchid Society and was recognized as the Best Paphiopedilum at the 2006 Ft. Lauderdale Orchid Show.

I hope this account of my own experience will encourage everyone to reach deep inside and call upon his or her creativity to make new and exciting hybrids. Flowering seedlings is a huge part of the wonder and excitement we experience with growing orchids, but while we strive to create these wonderful plants, we must also aim to grow them well along the way in order to see them bloom at their best.

**CULTURE**

Plants are no different from us when it comes to their need for nutrients and the proper environment to survive and thrive. I began learning this lesson early in life growing up on our farm in North Carolina. I was four years old when my mother dressed me in warm clothes one chilly winter morning, explaining to me that we were going to plant the new pecan trees that had just arrived in the mail. After I climbed into my little red wagon, she pulled me to the cow barn where she filled bushel tubs with cow manure. She patiently described to me how we were going to put the manure deep into the holes under the new little trees because they were going to need food to grow. My mother promised that if we did everything right, these little twigs would one day be strong trees big enough to produce pecans. Today, those pecan trees are more than 50 feet (15 m) tall and have been producing pecans for more than 30 years.

*Paphiopedilum* and *Phragmipedium* also need to be properly planted and fertilized on a consistent basis if we want to get them to remain healthy and flower. The maintenance program I’ve followed successfully for...
ABOVE LEFT  *Paphiopedilum* Moustache ‘Crystelle’, FCC/AOS (*philippinense* × *St. Swithin), is from a remake of this cross the author created using *Paph. philippinense* ‘Alford’, AM/AOS, which he received from Charles Alford. This grex has received several awards, including two First Class Certificates (2004 and 2005), an Award of Quality and a Certificate of Cultural Excellence.

ABOVE  *Paphiopedilum* Moustache ‘Gandalf’, AM/AOS (*philippinense* × *St. Swithin), is another fine example from this outstanding grex.

LEFT  *Paphiopedilum* Jan Ragan ‘Crystelle’, AM/AOS (*St. Swithin* × Michael Koopowitz), a new hybrid being registered, is named for Florida orchid grower Jan Ragan. *Paphiopedilum sanderianum* is one of the grandparents of this grex, which is easy to grow and flower.
more than 20 years involves some basic fundamentals and a simple set of easy-to-follow steps to be taken consistently at the same time every year.

Medium The potting mix I use is fairly porous, consisting of five parts medium fir bark, two parts Canadian peat and one-part each charcoal, extra-coarse Sponge Rok #4 and 1/2-inch (1.25-cm) Stalite. Combining these components in these proportions produces a mix that provides support for the roots while allowing them to breathe and resists becoming water-logged.

Watering When watering paphiopedilums, I prefer to use a Dramm 1000 (redhead) breaker with fairly strong pressure to facilitate the mixture of air and water while creating a gentle stream. I stand about 7 or 8 feet (2 or 2.5 m) away from the plants while watering so that the pressure will not damage the leaves but the volume is still ample enough to pull air into the pot while the water flows through the roots. Our water temperature here in Central Florida is approximately 70 F (21 C) year round, making it unlikely plants will experience shock from a sudden bath of cold water. My watering schedule is adjusted for and completely dependent on the weather. Bright and sunny weather causes the plants to dry out more quickly, necessitating more frequent watering. Most importantly, I never let my paphiopedilums completely dry out.

Fertilizing I recommend fertilizing with a balanced, water-soluble formula at 150–200 ppm (parts per million). Fertilizer is applied from October through May on the day after every other watering, ensuring that there are two waterings between every time fertilizer is applied. This allows any residual salts from the previous application of fertilizer to be flushed out before the next. Fertilizing is discontinued completely during the hot months of June through September because I find that the Florida heat causes the plants to take up too much fertilizer, resulting in salt burns at the tips of the leaves. Most importantly, I never let my paphiopedilums completely dry out.

Temperatures Greenhouse temperatures here in Central Florida can easily reach 100 F (38 C) every day in summer. Some paphiopedilums will show signs of stress under these conditions, but I have found them to be quite resilient, bouncing back almost immediately when temperatures start to...
cool down in the autumn. To help control heat and reduce stress during the hot months of summer, the paphiopedilum houses are shaded to 1,000 foot-candles. Light levels are brought back up to 1,400 foot-candles in the autumn and maintained throughout winter and spring. During these cooler months, night temperatures are allowed to drop to 55°F (13°C) and daytime temperatures are held to a maximum of 85°F (29°C).

Ailments It is almost impossible to prevent pests and disease entirely, but I much prefer to treat preventively rather than be forced to deal with an infestation. In my experience, high air movement, both day and night, combined with good greenhouse ventilation will almost completely prevent fungal and bacterial problems. Occasionally when I do find a plant affected by insects or disease, I remove it from the greenhouse immediately and treat it accordingly.

By consistently following this regimen for more than 20 years, I have found that we can grow paphiopedilums to near perfection. By making allowances for geographic and climatic differences, I believe it will work for many others too.

Frank Smith is the owner of Krull-Smith, an orchid nursery he founded in the late 1970s with Jim Krull. While one might get the impression here that he grows only slipper orchids, the author’s efforts in hybridizing in Phalaenopsis and the Cattleya Alliance are just as focused, evidenced by more than 600 quality awards received to date. Smith currently serves as president of the Central Florida Orchid Society, chair of the American Orchid Society Membership Committee and is an active AOS judge. 2815 Ponkan Road, Apopka, Florida 32712 (e-mail orchidfrank@aol.com).