



The Slipper Orchid Alliance Newsletter

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Perspectives in *Brachypetalum* Culture

I gather I am lucky. I do not have a greenhouse, so there are a lot of types of orchids that I can not grow well, but I did set up a light-room and found out that I can grow one group very well – *Brachypetalums*. And from what I have heard, the members of this Subgenus can prove to be a persnickety bunch – quite attuned to the smaller details and easily dissuaded from flourishing. Growing *Brachypetalums* - the species as well as the many hybrids available - came easily for me, but understanding what I have to give them that meets their needs so that it could be shared with others on a broader scale has proven a bit more difficult. What enables the *Brachypetalums* to adapt well and flourish?

Understanding the natural habitat and climate of the *Brachypetalums* provides some valuable clues. The five identified species in this group – *bellatulum*, *concolor*, *godefroyae*, *leucochilum*, *niveum* - all grow in southeast Asia – Thailand, Southwest China, Burma, Cambodia, Vietnam, and Malaysia. A map of their distribution reveals that they are generally located toward the interior elevations and western areas of this geographic area, toward the Indian

Ocean as well as on a few nearby islands. The climate in this geographic area is described as “monsoon tropical” with very distinct and dramatically different seasons: cold, dry winters and hot, moist summers. Rainfall in these regions can be as high as 120 inches for the year, but most of it falls within the warm monsoon season of about four months. In other words, when it rains, it rains hard and warm, but otherwise, conditions are fairly dry and cool. They are often found growing in leaf litter in crevasses on limestone cliffs under the light shade provided by the tree canopy. Temperatures generally range from the 50s for winter nights into the 90s for summer days.

There are further micro-climates associated with the various species, but the above are general common observations for all of them. Some of the species, such as *Paph. concolor*, are fairly widespread and are found in more diverse conditions within this general range. Others are much more specifically located, such as *Paph. niveum* and *Paph. godefroyae*. *Paph. bellatulum* likes it the coolest; *Paph. niveum*, the hottest. *Brachypetalums* range in elevation from 10–50 ft. for *Paph. godefroyae* and *Paph. leucochilum*, and up to 3,500 ft. for *Paph. concolor*. Each has its particular needs, and there are references available for further information listed at the end of this article.

Thinking about these factors in the context of providing a growing space and proper conditions leads to some basic requirements for *Brachypetalums* to thrive. The basement light-room provides a cooler, dryer winter. Summering the plants outdoors in the Mid-Atlantic area provides the hotter, more humid and moist conditions. I am convinced that these extremes of climate are a key component to *Brachypetalum* culture and initiating bloom. But this is not enough.

Water quality is also a key to successful *Brachypetalum* growth. All of them are very sensitive to salts at the root zone. In their natural habitat, during the summer monsoon, the roots are almost continually leached with a weak organic tea created by rainwater flowing through leaf litter as they sit on their limestone perches. In cultivation, use Reverse Osmosis or purified water with occasional weak fertilizer. And do your best never to get the leaves wet or to allow water to pool in the center of the plants. I water them like African violets – avoiding the leaves entirely to the extent

In Memorium *Dr. Albert Svoboda*

It is with great sadness that we report that Dr. Al Svoboda passed away on September 14. Al had been Secretary of the SOA and was currently a Director. He had been fighting his illness for a long time and had faced the challenges of his illness with courage, dignity and humor. He was a fine grower and loved sharing his passion for his orchids, especially the slippers. He was also a strong voice for conservation, not only in the wild but also in existing, older collections. His dedication, support and wise counsel will be sorely missed. We extend our deepest sympathy to his wife, Sandy.

possible. If water pools at the crown of the leaves, a paper towel folded at an angle can be used to soak up the excess. Yes, diligence is required as the plants can be very prone to rot.

Being a home grower, I collect rainwater which naturally contains a few leaves and organic material in it as it collects in the containers in my back-yard, especially in the fall. I save this weak, organic-laced, slightly acidic tea for my Paphiopedilums – especially my Brachypetalums, and they seem to love it. They seem to prefer more fertilizer during the wetter summer months where, under my conditions, I supplement the rainfall with regular watering to keep them consistently moist (but not wet). In addition to the organic tea, I use Dyna Gro Mag Pro™ at a strength of ¼ teaspoon to one gallon of water at alternate waterings or in between the rain.

Also, because of their intolerance to salts, I repot my Brachypetalums at least once a year, generally in the later spring/early summer just after the blooming season. I tend to repot seedlings, which are especially sensitive to salts, more frequently at about 9-month intervals. I have seen contrary advice to this, however. Dr. Tanaka reports that he does not repot his Brachys for years on end to create specimen size plants. It is true that the plants grow relatively slowly, but once they achieve a critical mass of 2-3 growths, their growth cycle and blooming are more consistent – even with more frequent repotting. What I can say is to observe your conditions, because as intolerant to salts as they are, they are also intolerant to the break-down of bark and organic material in their mix and will quickly lose roots if the mix breaks down too far in between repotting. Once roots are lost on Brachypetalums, they are very difficult to bring back, needing to be secure and nestled in their pots to avoid movement and coaxed with rooting hormone, such as Super Thrive® or K-L-N® along with a good measure of TLC (“tender loving care”). For this reason, take extra care to repot these plants in a gentle manner and do your best to avoid breakage and resulting plant stress.

When you pot orchids, you are creating a microclimate in and of itself. I have found that even though the Brachypetalums are compact plants, they need a loose bark mix that drains well. I generally use a mix that contains one half part medium bark, one quarter part medium perlite and one quarter part fine charcoal. I also add about one teaspoon of oyster shell to one cup of mix. In repotting, I have observed the roots attaching to the pieces of oyster shell apparently seeking the calcium that the roots in their natural habitat absorb from their limestone perches. I pot them in tall, narrow plastic pots sized according to the size of the root mass – not the size of the plant. A single layer of “Aliflor”® pellets or river pebbles at the base of the plastic pots provides some ballast as well as additional drainage.

In the basement light-room in the winter-time, I grow the plants about two feet below a bank of fluorescent lights

spaced two inches apart from one another and alternating warm and cool 40 watt tubes. Temperatures range between 55 degrees at night and 70 degrees in the daytime. The plants are placed on top of humidity trays that provide additional humidity levels at the base of the root zone. The average humidity level in my light-room generally runs between 70-85 percent. In these high humidity conditions (and due to the fact that I have no drain in the light-room), I water the plants sparingly and they are almost dry in between. I rarely fertilize during this period. And the room is equipped with several fans which keep the air moving. I place the plants in the area closest to my “outside air intake” flap where the temperatures will be the coolest. This corresponds to the cooler, dry winters of their natural habitat and provides a rest for the plants coming into their blooming season of the spring to early summer.

In the summer, I move my plants outdoors, so they are treated to the Mid-Atlantic’s version of monsoon season. Through the summer months here, a common weather pattern is hazy, hot and humid. The earlier part of the summer and the fall provide more natural rainfall, but I supplement the rain with regular and heavy waterings to offset the typical summer temperature range of 70 degree nights and up to 90+ degree days. I set the Brachypetalums outside, hanging on hooks under the dogwood trees at an angle so that rainwater will drain off them. They receive dappled sunshine all day and a breeze most of the time. I top dress each pot with about a teaspoon of bone meal at the beginning of the season and then again in the fall just before I bring the plants back into the house. In this way, the calcium offsets the decomposing bark and provides additional nutrients during their growth period.

So my advice? Provide seasonal differences, good water and calcium. Watch and react to your conditions because what will work for my conditions may not work in yours, but considering the natural habitat and seeking to mimic it in its critical elements are a starting point for success. And most of all, enjoy these dainty and unusual gems of cream colored flowers marked with raspberry or maroon stippling for months after they grace you with their blooms!

Mary Jo Gilsdorf

References:

[Paphiopedilum Grower’s Guide](#); Lance A. Birk; Second Edition © 2004.

[Slipper Orchids of Vietnam](#); Leonid Averyanow, Phillip Cribb, Phan Ke Loc, Nguyen Tien Hiep, © 2003.

[How to Grow Bigger Brachypetalums](http://www.orchid.or.jp/ORCHID/people/tanaka/Brachcult.html), Dr. Tanaka, www.orchid.or.jp/ORCHID/people/tanaka/Brachcult.html

Upcoming Events

51st Paphiopedilum Guild Meeting & Orchid Show

Saturday and Sunday, January 13 and 14, 2007
The Inn at Morro Bay, in Morro Bay, California
The tentative list of speakers includes Dr. Leonid Averyanov from Russia on Paph Species of Vietnam, Karen Muir on Brachypetalums, Dr. Harold Koopowitz on miniature Paphs, Fred Clark of Sunset Orchids on multi-floral Paphs, Sandy Ohlund on long-petaled Phrags, and Cynthia Fleig with recent AOS award slides of Paphs and Phrags. For more information and registration contact Patti James at 805-528-5086 or flowergirlpj@charter.net. Deadline for room reservations is December 12, 2006. The meeting registration deadline is January 3, 2007.

AOS Members Meeting

May 3-7, 2006

Arlington, Texas

The SOA is sponsoring Hadley Cash to speak about white and pink Paph breeding. Contact Jerry and Ronnie Brandenburg at jbrb66@sbcglobal.net.

Paphiopedilum Forum

February 17, 2007

National Arboretum, Washington, D.C.

Contact Bill and Lynn Goldner at woodstreamorchids@chesapeake.net.

Orchid Conservation Coalition

One of the major purposes of the Slipper Orchid Alliance, included in the SOA Bylaws, is to encourage conservation of orchids in their natural habitats. To further this aim, in April of this year the SOA donated \$500 to the Orchid Conservation Alliance (OCA). Furthermore, the SOA Board voted to become a member of the Orchid Conservation Coalition (OCC) and to participate in its project, "1% for Orchid Conservation."

The Orchid Conservation Coalition is a partnership among participating members, which currently include five orchid societies, four businesses and six non-profit conservation organizations (of which the Orchid Conservation Alliance is one). The OCC is not an organization in the way we typically think of an organization. It does not have a board,

it takes in no money and it distributes no money. Membership is by participation; there are no dues. It is a coalition around a common interest – to advance orchid conservation around the world, by raising money and awareness for orchid conservation. The heart of the OCC is networking. The exchange of information among participants and non-profit orchid conservation organizations will make conservation a real aspect of orchid growing for the average orchid grower and orchid societies – something they can actively engage in, make decisions about, and contribute to.

1% for Orchid Conservation (1% FOC) is a program of the Orchid Conservation Coalition. Organizations that participate in 1% FOC commit to budget 1% or more of their net revenue toward in situ orchid conservation projects of their choice. The choice of where a donation should go is not limited to the non-profit orchid conservation organizations participating in the OCC. Organizations can invest in their own in situ conservation project. As the coalition membership increases, more orchid organizations will consider participating, thus increasing the donor base for in situ orchid conservation.

One of the biggest hurdles for in situ orchid conservation is funding. Imagine if every orchid society budgeted 1% or more of their net revenue toward in situ orchid conservation! It does not matter whether an orchid society's contribution is \$1, \$100, or \$1000. The combination of all donations will positively impact orchid conservation. Orchid growers, societies, and businesses actively engaged in donating will make a difference.

The Orchid Conservation Alliance (OCA) (<http://www.orchidconservationalliance.org>) is a non-profit orchid conservation organization that identifies and funds in situ orchid conservation projects with pooled donations from individuals and organizations. Their first goal was to raise \$10,000 toward the purchase of 100 hectares (250 acres) by EcoMinga Foundation (<http://www.ecominga.net>) of threatened orchid habitat located in the Upper Pastaza watershed in the Andes of eastern Ecuador near Baños (Banos). The 100 hectares purchase will expand EcoMinga's current preserve of 150 hectares near the town of Mera in the Rio Zuñac watershed on the western flanks of the Cordillera Abitagua at 1600-2400 meters.

The World Wildlife Fund has declared this area a "Gift to the Earth." New species of plants are yet to be discovered in the area. The preserve contains over 50 endemic plant species that have been identified, the Spectacled Bears and a large diversity of birds. Some orchids on this preserve are a new species or subspecies of *Dracula* allied with the Colombian *Dracula exasperata*, *Dracula fuligifera*, *Teagueia zeus*, *Porroglossum condylosepalum*, *Scaphosepalum jostii*, *Masdevallia rosea*, and many species of *Lepanthes*. Also found on the preserve is a large *Sobralia* which Dr. Cal Dodson thinks may be a new species. Lou Jost, of the EcoMinga Foundation, and David Neill have

recently discovered a spectacular new tree from the genus *Meriania* and several new species of trees from other families. An additional future purchase will include the eastern flanks of Cordillera Abitagua north of Mera at 1100 meters to 1700 meters. This area includes a limestone canyon that is the habitat of *Phragmipedium pearcei*, which grows by the thousands in the limestone along the river.



Lepanthes ruthiana

Among the many unique plants found there, Lou Jost and Stig Dalstrom have discovered *Masdevallia stigii*, *Masdevallia loui*, *Trichosalpinx jostii*, and an undescribed *Cyclopogon* relative that may belong to a new genus. Another area under consideration for future purchase is higher in the Upper Pastaza watershed. This area is rich in miniature orchids. In the drier lower slopes of this watershed *Phragmipedium lindenii* grows. Lou Jost says *Phragmipedium lindenii* is a self-pollinating mutant of either *Phragmipedium wallisii* or *Phragmipedium caudatum*. The slipper pouch is replaced by a normal third petal. This petal comes with an extra anther. This extra anther grows straight into the stigma, automatically fertilizing the flower. The Upper Pastaza watershed is under threat of being destroyed for logging and farming. In August, the Orchid Conservation Alliance reached its \$10,000 goal (which included the Slipper Orchid Alliance's donation) toward securing the 100 hectares of threatened orchid habitat. Most of the donations came from individuals. Other societies that donated toward reaching the goal were: the San Francisco Orchid Society, the Central Kentucky Orchid Society, the Oregon Orchid Society, the Little Egypt Orchid Society, and the Orchid Digest. The EcoMinga Foundation has recently joined the OCC.

Another non-profit orchid conservation organizations participating in the coalition is The Grande Ronde Overlook Wildflower Institute Serving Ecological Restoration (GROWISER), La Grande, Oregon (<http://www.growiser.org>). GROWISER's protection has fostered

the habitat of *Cypripedium montanum* on its preserve. In 1993, the GROWISER native plant preserve was founded by Dr. Andy Huber as a non-profit corporation to preserve a pristine 160-acre site in northeastern Oregon. GROWISER's mission is inherent in its title, specifically "Wildflower Institute Serving Ecological Restoration." The focus is on overall habitat preservation. GROWISER promotes the growth and preservation of all of its native plant species both in situ and ex situ.

Working with volunteers and Kelsey Creek Labs, flowers are pollinated and seeds collected for further ecological restoration and ex situ conservation. The most intensive restoration efforts have been with *Cypripedium montanum*. Seeding of *Cypripedium montanum* into the natural environment has been done since 1993 using various methods to learn what is most effective. The number of mountain lady's-slippers has expanded to over 2500 individual plants which are studied to learn further details of the orchid's life cycle. Recently the mountain lady's-



Masd. rosea



Masd. loui



Phrag. piercei in its natural habitat

slipper seeds have been artificially "flasked" with the hope of providing commercially available plants.

There are 190 native plants on the preserve, nine of which are orchids: *Cypripedium montanum* (mountain lady's-slipper), *Calypso bulbosa* (fairyslipper), *Piperia elegans* (elegant piperia), *Piperia elongata* (denseflower rein orchid), *Spiranthes romanoffiana* (hooded lady's tresses), *Goodyera oblongifolia* (western rattlesnake plantain), *Corallorrhiza maculata* (summer coralroot), *Corallorrhiza striata* (hooded coralroot), and *Cephalanthera austiniiae* (phantom orchid). GROWISER conducts educational tours of its preserve to school groups and others. Adjacent to the preserve is housing

for visiting researchers. GROWISER hopes to help others establish more orchid preserves. Dr. Huber is available to speak to orchid societies. I have seen his presentation on GROWISER's conservation and research activities, and I recommend it. I think orchid society members will find it interesting and different from the other presentations they have seen. Besides orchids, the presentation shows many non-orchid plants that make up the habitat. Dr. Huber also talks about his work with *Cypripedium montanum*. You may contact Dr. Andy Huber at ahuber@eou.edu.

Orchid Conservation International (OCI)(<http://www.orchidconservation.org>) has a different model for orchid conservation from the OCA or GROWISER. They collect donations and sell posters to raise money to fund grant requests from conservation groups or projects. Grants are given out once a year. None of the 2006 OCI conservation grants directly concerns slipper orchid conservation. For further information on the OCI 2006 awards, go to <http://www.orchidconservationcoalition.org/conservorg/ociawards.html>. The OCI is an independent, non-profit organization, established to provide a firm funding base for the work of the Orchid Specialist Group (OSG) of the Species Survival Commission (SSC) of The World Conservation Union (IUCN).

A recent non-profit conservation organization to join the OCC is the Tropical Research and Education Center (TREC), Homestead, FL, USA. While TREC is better known for research in the horticultural industries in Florida, TREC recently began a long-term project involving orchid production and conservation. The long-term goal is to become a center of excellence for orchid research worldwide. For more information on TREC conservation research: <http://www.orchidconservationcoalition/conservorg/trec.html>.

Other orchid societies that are participating in the OCC and 1% FOC besides the SOA are the following: the San Francisco Orchid Society, the Orchid Species Society of Western Australia, the New Hampshire Orchid Society, and Bucks County Orchid Society (PA, USA). Businesses include the Orchid Seedbank Project, Nascent Orchids, Mist Exotics, and the Calypso Orchid Company. The Orchid Digest has also endorsed 1% for Orchid Conservation.

Another possible avenue for in situ conservation donations is habitat and orchid restoration. The Sainsbury Project to reintroduce *Cypripedium calceolus* in the United Kingdom is an example. Restoration attempts within a country are easier than if orchids have to be transported across country borders. Restoration efforts are being attempted across country boundaries with slipper orchids. This is difficult because of the Convention on International Trade in Endangered Species (CITES) and government regulations. CITES affects the trade of orchids commercially across country borders. This is also true for orchids crossing country borders for in situ restoration efforts. For CITES Appendix

I orchids like the *Paphiopedilums* and the *Phragmipediums*, restoration can be difficult if not impossible. The cost and difficulty of restoring orchids and their habitats are greater than if the orchids and their habitats are originally preserved in situ. In situ orchid conservation and habitat preservation are the first line of defense for safeguarding orchid species for the future. A strong conservation effort would result if orchid growers would pledge not to buy newly discovered orchids like *Phragmipedium kovachii* until after the orchid and its habitat have been safeguarded in situ. Given the realities of our world, ex situ orchid conservation is important. Orchids and their habitats continue to be destroyed by logging, farming, collection, and climate change.

The Orchid Conservation Coalition has an ex situ orchid conservation project called the Living Orchid Collection (LOC) (<http://www.livingorchidcollection.org>). Recently launched, LOC is a basic building block for ex situ orchid conservation. The primary purpose of LOC is to have an organized, virtual, living orchid species collection. Grouping orchid collections together as a virtual single collection will strengthen ex situ conservation efforts more effectively than having separate individual collections. Individuals and organizations can participate. People enter their species orchids into the database. They still own, grow, and have all rights to the orchid. An LOC identification is assigned to all participants to allow them to remain anonymous. LOC can be used by ex situ conservation projects. Some possible secondary purposes for LOC are: producing pollen and seed, propagation for genetic diversity, research, replanting in natural habitats, and taking pressure off wild collecting. Individuals who have an orchid in the LOC database decide whether to participate in any further ex situ conservation projects. The Living Orchid Collection is free for participation and for use. Since LOC is a new project, it will take a while for the collection to grow and become a useful tool. Taxonomists are being enlisted to corroborate that orchid species are correctly identified. After a taxonomist verifies the identification of an LOC orchid, the owner may put the taxonomist's name next to the orchid in the database. Ex situ conservation projects that use the database can take this verification into account.

The Orchid Conservation Coalition's hope is that conservation will interest orchid growers as much as winning awards or learning an orchid's culture. Our collective action today will determine the state of orchid species for future orchid growers. Hopefully, conservation efforts of orchid growers now will leave healthy populations of orchids in situ for future orchid enthusiasts. We do have a say today in the preservation of orchid species in ex situ and in situ.

Mark Sullivan is the administrator of the Orchid Conservation Coalition and its projects. For more information please visit their website: www.orchidconservationcoalition.org

Phragmipediums

Part two of a series by Helmut Rohl

Section *Micropetalum* (Hallier) Garay

[**bas.:** *Paphiopedilum* sect. *Micropetalum* Hallier]

The plants are characterized by rather wide petals that are longer but similar in color and shape to the dorsal sepal.

Phragmipedium andreetae Cribb & Pupulin 2006

The name of the species honors Padre Andreeta, a Salesian priest who has been collecting orchid species for many years.

These small lithophytic plants occur in Ecuador at elevations between 500 m and 1000 m. Their growth habit and environment are similar to that of *P. fischeri*. The occasionally branched, up to 16 cm tall inflorescences bear successively opening flowers measuring up to 5.0 cm. Dorsal sepal and synsepal are pale pink, and the petals are white flushed pink on the back. The pouch is pink spotted purple with a yellow stripe along the internal back wall. The white staminode has a central yellow spot.

No AOS awards. No offspring,

Phragmipedium besseae Dodson & Kuhn 1981

[**syn.:** *Paphiopedilum besseae* (Dodson & Kuhn) V. A. Albert & Börge Pettersson]

The name of the species honors Elizabeth Locke Besse who discovered the plant.

These lithophytic or terrestrial plants occur in semi-shaded areas of subtropical regions in the Andean foothills of Ecuador and Peru at elevations around 1100 m. The up to 50 cm tall, 1- to 6-flowered inflorescences bear successively opening, striking cinnabar red, concolor flowers with slightly concave sepals and synsepals. The flat, horizontally held petals with acute to obtuse apices overlap the sepals giving the flowers a round appearance. The Peruvian population has much wider petals, while the Ecuadorean population produces branching and more floriferous inflorescences bearing more star-shaped flowers with slender segments and a more elongated and vertically positioned pouch. The plants of Ecuadorean provenance are now classified as *P. dalessandroi*.

Measurements: NS 9.2 cm, NS vert. 7.3 cm.

23 HCC/AOS, 51 AM/AOS, 7 FCC/AOS, 1 CBM/AOS, ICCM/AOS and 2 CCE/AOS. 68 offspring and 242 progeny.

Phragmipedium besseae fma. *flavum* (Braem) Gruss 1999

[**bas.:** *Phragmipedium besseae* v. *flava* Braem]

The Latin term *flava* means yellow.

The variety differs from *P. besseae* only by the flower color.

6 HCC/AOS and 9 AM/AOS.

Phragmipedium dalessandroi Dodson & Gruss 1996

[**syn.:** *Phragmipedium besseae* 'Ecuadorean form' B. Bergstrom; *Phragmipedium besseae* v. *dalessandroi* Dodson & Wimber; *Phragmipedium besseae* Dodson & Kuhn v. *dalessandroi* (Dodson & Gruss) Moon & Cribb]

Listed under *Phragmipedium besseae*.

Phragmipedium fischeri Braem & Mohr 1996

[**syn.:** *Phragmipedium schlimii* v. *fischeri* (Braem & Mohr) Gruss]

The name of the species honors Jerry Lee Fischer, a grower and hybridizer specializing in phragmipediums.

These small terrestrial plants grow in full shade next to creeks and streams in Ecuador at elevations around 1400 m. The plants are similar to *P. schlimii*, but they are much smaller, have more horizontal leaves and more intensely colored flowers.

Measurements: NS 4.8 cm, NS vert. 4.2 cm.

1 CHM/AOS. 9 offspring and 18 progeny.

Phragmipedium kovachii Atwood, Dalström & Fernandez 2002

[**syn.:** *Phragmipedium peruvianum* Christenson]

The plants are named after Michael Kovach.

These large terrestrial plants occur in Peru fully exposed to direct sunlight on steep cliffs at an elevation around 2000 m. The robust, up to 50 cm tall inflorescences bear up to 4 richly colored flowers. The rather wide dorsal sepal and synsepal are cream, suffused and veined purple. The wide elliptical to globose petals are ruffled along the upper margins, reflexed along the basal half of the lower margins, and range in color from fuchsia and raspberry red to dark purple. The spheroid pouch is deep red violet with darker striations, creamy white internally suffused lighter purple. The staminode is creamy white suffused purple.

Measurements: NS 18.0 cm, NS vert. 13.0 cm.

1 CHM/AOS.

Phragmipedium schlimii (Linden & Rchb. f.) Rolfe 1896

[**bas.:** *Selenipedium schlimii* Linden & Rchb. f.; **syn.:** *Cypripedium schlimii* (Linden & Rchb. f.) Bateman; *Paphiopedilum schlimii* (Rchb. f.) Stein; *Phragmopedilum schlimii* (Linden & Rchb. f.) Pfitzer]

The name of the species honors Louis Joseph Schlim, a plant collector who discovered the plants. The popular name of the plants is Zapato blanco (white shoe), Zapato rosado (pink shoe) or Zapato de baile (dancing shoe).

These terrestrial plants grow on steep slopes of the Eastern and the Central Cordilleras in Colombia at elevations around 1300 m. The up to 30 cm tall, 2- to 6-flowered inflorescences bear successively opening, pale to rich pink, highly variable flowers. The concave, ovate to subcircular, uniformly flushed pink dorsal sepal more or less obscures the aperture of the pouch. The synsepal is somewhat larger but similar in color to the dorsal sepal. The ovate petals are spotted rose proximally and suffused pink to rose throughout. The spheroid pouch is white to pink densely peppered rose. The infolded margins of the nearly circular aperture are spotted maroon. The staminode is golden yellow centrally with white margins and a large maroon blotch proximally. Measurements: NS 8.2 cm, NS vert. 6.5 cm. 8 HCC/AOS, 2 AM/AOS, 2 JC/AOS, 1 CBM/AOS, 8 CCM/AOS and 1 CCE/AOS. 34 offspring and 163 progeny.

Phragmipedium schlimii fma. *albiflorum* (Linden) Gruss 1996

[**bas.:** *Cypripedium schlimii* v. *albiflorum* Linden]

The name of the forma means “white-flowered.” This pure white color form is very rare. The white pouch has an aperture with markedly red margin. The staminode occasionally shows a red blotch.

Section *Phragmipedium* Rolfe nom.cons.

[**syn.:** *Cypripedium* sect. *Caudata* Krzl.; *Paphiopedilum* sect. *Phragmipedium* (Rolfe) V. A. Albert & Börge Pettersson]

For recent discussions of this section see Braem, Ohlund and Quené (2004), Braem and Ohlund (2004) and Dressler (2005).

The plants are characterized by almost simultaneously opening flowers and long, trailing petals considerably

exceeding the sepals in length.

Phragmipedium caudatum (Lindl.) Rolfe 1896

[**bas.:** *Cypripedium caudatum* Lindl.; **syn.** *Cypripedium humboldtii* Warsc.; *Cypripedium caudatum* Lindl.; *Paphiopedilum caudatum* (Lindl.) Pfitzer; *Phragmipedium caudatum* (Lindl.) Pfitzer; *Selenipedium caudatum* (Lindl.) Rchb. f.]

The name of the species is derived from the Latin term “caudatum” meaning “long-tailed” in reference to the long petals.

These lithophytic or terrestrial plants grow in Ecuador, Peru and perhaps Colombia on mosses close to seepage channels at elevations between 2000 m and 3000 m. The up to 1 m tall 2- to 4-flowered inflorescences bear long-lasting flowers whose cream-colored dorsal sepal has dark maroon to dark green veins and droops over the pouch. The synsepal is colored similarly. The rather narrow and distally ribbon-like petals elongate during a time interval from 1 to 1½ weeks and show colors similar to the dorsal sepal. The buff-colored, elongated pouch is suffused and veined chestnut brown, and the rim of the aperture is maroon contrasting with the white infolded side lobes.

Measurements: NS 17.5 cm, NS vert. 94.0 cm. 21 HCC/AOS, 32 AM/AOS, 1 FCC/AOS, 3 CBM/AOS and 15 CCM/AOS. 27 offspring and 95 progeny.

Phragmipedium caudatum var. *wallisii* (Rchb. f.) Pfitzer 1903

[**bas.:** *Selenipedium wallisii* Rchb. f.; **syn.:** *Cypripedium caudatum* v. *album* Linden; *Cypripedium caudatum* v. *wallisii* Veitch; *Cypripedium wallisii* (Rchb. f.) B. S. Williams; *Paphiopedilum caudatum* v. *seegerianum* J. O'Brien; *Paphiopedilum caudatum* v. *wallisii* Kerchove; *Paphiopedilum caudatum* v. *wallisii* Rchb. f.; *Paphiopedilum caudatum* v. *wallisii* Stein; *Paphiopedilum wallisii* (Rchb. f.); *Phragmipedium wallisii* (Rchb. f.) Garay; *Selenipedium caudatum* v. *wallisii* Rolfe]

The species is named in honor of Gustav Wallis who discovered the plant.

These terrestrial plants occur in Ecuador in habitats similar to *P. caudatum*. They differ from it by smaller plant and flower size and the more yellow segments. The pouch is white to off-white lightly flushed pink with brown venation and a yellow rim of the aperture of the pouch. The staminode is three-lobed.

Measurements: NS 4.8 cm, NS vert. 67.0 cm.
6 HCC/AOS, 10 AM/AOS, 2 FCC/AOS and 1 CHM/AOS.
23 offspring and 25 progeny.

Phragmipedium caudatum* var. *warscewiczianum (Rchb. f.) Gruss 1993

[**bas.:** *Cypripedium warscewiczianum* Rchb. f.; **syn.:** *Cypripedium caudatum* v. *roseum* hort. Kerchove; *Cypripedium caudatum* v. *warscewiczii* hort. in *L'Orchidophile* 1887; *Paphiopedilum caudatum* v. *roseum* hort. Kerchove; *Phragmipedium caudatum* v. *warscewiczii* hort. in *Miss. Bot Gdn Bull.* 1932; *Phragmipedium humboldtii* (Warsc. Ex Rchb. f.) Atwood & Dressler; *Phragmipedium warscewiczianum* (Rchb. f.) Garay; *Phragmipedium warscewiczianum* (Rchb. f.) Schltr.; *Selenipedium caudatum* v. *roseum* Du Buysson; *Selenipedium caudatum* v. *warscewiczii* in *Gard. and For.* 1890; *Selenipedium warscewiczianum* Rchb. f.]

The name of the species honors the Polish plant collector J. de Warscewicz.

These lithophytic or terrestrial plants occur in Costa Rica, Guatemala, Nicaragua and possibly Honduras at elevations around 1200 m. They differ from *P. caudatum* by their darker, shorter and broader leaves, by a flower count of usually three or less, a darker brown flower color and a yellow-brown aperture of the pouch.

Measurements: NS 23.0 cm, NS vert. 94.0 cm.
3 HCC/AOS, 3 AM/AOS, 2 FCC/AOS, 1 CBR/AOS and 1 CHM/AOS. 17 offspring and 20 progeny.

Phragmipedium exstaminodium Castaño, Hágsater & Aguirre 1984

[**syn.:** *Paphiopedilum exstaminodium* (Castaño, Hágsater & Aguirre) V. A. Albert & Börge Pettersson; *Phragmipedium humboldtii* v. *exstaminodium* (Castaño, Hágsater & Aguirre) Atwood & Dressler]

The name of the plant refers to the missing staminode.

These plants occur in Chiapas, Mexico, and are characterized by their missing staminode. Sepals and petals are yellowish green with dark green to maroon venation, petals dark maroon and ribbon-like except for proximal part. The pouch is cream to yellow distally brown with darker brown venation. Measurements: NS 6.7 cm, NS vert. 74.5 cm.

1 HCC/AOS, 1 CBR/AOS, 1 CCM/AOS and 1 CHM/AOS.
Phragmipedium lindenii (Lindl.) Dressler & N. H. Williams 1975

[**bas.:** *Uropedium lindenii* Lindl.; **syn.:** *Cypripedium*

caudatum v. *lindenii* (Lindl.) Veitch; *Cypripedium caudatum* v. *uropedium* Krzl.; *Cypripedium lindenii* (Lindl.) Van Houtte; *Paphiopedilum caudatum* v. *lindenii* (Lindl.) Brongn. ex Stein; *Paphiopedilum lindenii* (Lindl.) V. A. Albert & Börge Pettersson; *Phragmipedium caudatum* v. *lindenii* (Lindl.) Pfitzer; *Selenipedium caudatum* v. *lindenii* (Lindl.) Pucci; *Selenipedium caudatum* v. *uropedium* Rolfe; *Selenipedium lindenii* (Lindl.) Nichols]

The name of the plant honors Jean Jules Linden, the Belgian orchid collector, hybridizer and editor of the famous work *Lindenia*.

These plants inhabit Colombia, Ecuador and Venezuela in habitats similar to those of *P. caudatum*. The up to 1 m tall, 2- to 4-flowered inflorescences bear simultaneously opening, yellow to greenish flowers with three petals but no pouch. All segments have green to maroon venation. The drooping, ribbon-like petals reach a length of up to 1 m.

Measurements: NS 7.5 cm, NS vert. 47.0 cm.
Awards and progeny are listed under *Phragmipedium caudatum*.

Section ***Platypetalum*** (Pfitzer) Garay

[**bas.:** *Paphiopedilum* sect. *Platypetalum* (Pfitzer) V. A. Albert & Börge Pettersson; *Phragmopedilum* sect. *Platypetalum* Pfitzer].

The plants are characterized by the different shapes of their sepals and petals.

Phragmipedium lindleyanum (Schomburgk ex Lindl.) Rolfe 1896

[**bas.:** *Cypripedium lindleyanum* Schomburgk ex Lindl.; **syn.:** *Paphiopedilum lindleyanum* (Schomburgk ex Lindl.) Pfitzer; *Phragmopedilum lindleyanum* (Schomburgk ex Lindl.) Pfitzer; *Selenipedium lindleyanum* (Schomburgk ex Lindl.) Rchb. f.]

The species name honors the famous botanist John Lindley who first described it.

These terrestrial and occasionally epiphytic plants grow in acidic, semi-shaded environments of detritus-filled seepage channels in Guyana and Venezuela at elevations around 3000 m. The long, belt-shaped leaves have yellow margins. The up to 1 m tall, branched, up to 30-flowered inflorescences successively bear small flowers over an extended period of time. The dorsal sepal is green veined rose, distally curled forward. The synsepal is colored similarly. The linear-lanceolate petals have hirsute and undulate pale green

margins and are veined reddish proximally, changing to maroon distally. The elongated, golden yellow pouch has amber venation and a circular aperture with infolded side lobes heavily spotted maroon. The staminode is delta-shaped. Measurements: NS 8.8 cm, NS vert. 6.7 cm.

1 AM/AOS, 3 CBM/AOS and 2 CCM/AOS. 19 offspring and 43 progeny.

Phragmipedium lindleyanum* var. *kaieteurum (N. E. Brown) Pfitzer 1903

[**bas.:** *Selenipedium kaieteurum* N. E. Brown; **syn.:** *Paphiopedilum kaieteurum* (N. E. Brown) V. A. Albert & Börge Pettersson; *Phragmipedium kaieteurum* (N. E. Brown) Garay; *Phragmipedium lindleyanum* v. *kaieteurum* (N. E. Brown) Rchb. f. ex Pfitzer in Cash; *Phragmopedilum lindleyanum* v. *kaieteurum* (N. E. Brown) Pfitzer; *Selenipedium lindleyanum* v. *kaieteurum* (N. E. Brown) Cogniaux]

The species is named after Kaieteura Falls, the original locality for the plants.

These plants are sympatric with *P. lindleyanum*. The short, spatulate leaves lack yellow margins. The flowers are more greenish than the normal form. The pouch is green flushed bronze with light brown venation. The proximal corner of the aperture is blotched. The triangular staminode has a blunt and round acumen.

Measurements: NS ~8 cm, NS vert. ~6 cm.

The awards are listed under *Phragmipedium lindleyanum*. 5 offspring and 8 progeny are listed under *Phragmipedium kaieteurum*.

Phragmipedium lindleyanum* var. *sargentianum (Rolfe) Gruss 1893

[**bas.:** *Selenipedium sargentianum* Rolfe; **syn.:** *Cypripedium sargentianum* (Rolfe) Krzl.; *Paphiopedilum sargentianum* (Rolfe) Hallier; *Phragmipedium sargentianum* (Rolfe) Rolfe; *Phragmopedilum sargentianum* (Rolfe) Pfitzer]

The species is named in honor of Professor C. S. Sargent, editor and director of the Harvard University Arboretum.

These terrestrial plants inhabit shaded areas of acidic peat bogs near creeks and streams in the Organ Mountains of Brazil at elevations between 850 m and 950 m. The up to 1.3 m tall, 2- to 5-flowered inflorescences bear successively opening flowers with a concave, elliptic-lanceolate, pale greenish dorsal sepal heavily veined maroon. The synsepal is colored similarly. The slender, proximally cream green and distally suffused maroon petals have undulate maroon

margins. The elongated pouch is buff-colored and veined red, with infolded side lobes densely spotted red. The rectangular aperture has rounded corners.

Measurements: NS 10.2 cm, NS vert. -.

Awards listed under *Phragmipedium lindleyanum*. 24 offspring and 127 progeny listed under *Phragmipedium sargentianum*.

The *Phragmipedium* complex has been a taxonomic stepchild until fairly recently when new species appeared suddenly and unexpectedly. So there is some hope that additional new ones may show up in the not too distant future. Hope burns forever.

Natural Hybrids

Phragmipedium xroethianum (*hirtzii* x *longifolium*)

Gruss & Kalina 1998

The name of the natural hybrid honors Jürgen Röth, a renowned orchidologist and associate of the Halle Botanical Garden.

The grex is similar to *P. hirtzii*, but differs from it by the larger size of the plant and the flower. It differs from the other parent, *P. longifolium*, by the black hairs on the upper margin of the staminode

Phragmipedium xgrande (*caudatum* x *longifolium*)

(Rchb. f.) Rolfe 1897

[**bas.:** *Cypripedium Grande* Rchb. f.; **syn.:** *Paphiopedilum Grande* (Rchb. f.) Stein; *Selenipedium Grande* (Rchb. f.) Rolfe]

At this point in time only the second of these two natural hybrids has played a significant role in hybridizing. Its man-made equivalent is listed as *P. Grande*, and it is discussed below in the first group of hybrids. The first one of these natural hybrids shows a good deal of promise, but seemingly has not been used in breeding yet.

What has been said about species at the end of the preceding section applies here also.

9th International Slipper Symposium

Kissimmee, FL

The Slipper Orchid Study Group of Florida, led by Jamie Lawson, presented its annual Symposium at the Ramada Gateway Hotel in Kissimmee, Florida, on Saturday, November 4, 2006. Those attending were treated to three excellent talks, a panel of very experienced slipper growers, seven sales tables, good food, an auction and warm camaraderie.

Sam Tsui (Orchid Inn, Bloomington, Illinois) opened the day with a talk on "What Is New in Multifloral Paphiopedilum Breeding." He reviewed the important species and emphasized the breeding within a species to improve the quality of the flowers, size, color, number of flowers and vigor of the plants. Paph. rothschildianum 'Mont Milais' is in his opinion the best of that species for breeding. He piqued our interest with pictures of many hybrids, illustrating some of the best plants being used as parents and their exciting progeny. Many hybridizers are looking for creative combinations.

Bill Goldner (Woodstream Orchids, Huntingtown, Maryland) presented "Perspectives in Growing *Phragmipediums*." *Phragmipediums* love water, and the better the water quality, the better the plants. Their light requirements are between *Paphiopedilums* and *Cattleyas*. He follows the dictum of fertilizing "weakly weekly" for four out of five waterings. Air movement is extremely important; you should aim for slight movement of the leaves and flowers. He talked about "perceptive growing" - looking at your plants constantly. You may need to experiment to find your ideal conditions, or as he put it - "try, observe, learn." Understanding a species' habitat is important to providing its requirements. Those that grow along rivers have different needs than those growing on cliffs.

Dr. Eric Christenson is a research taxonomist and gave some of the history of taxonomy of *Phragmipediums*. Over the years there have been disagreements between the "splitters" and the "lumpers." He discussed how variation over distance in a species has led to some splitting that he does not agree with.

A few of the examples he gave are the following. *Ecuadorensis* is not a valid species. *Hartwegii* and *roezlii* are part of a continuum of *longifolium*. He views *boissierianum*, *reticulatum* and *czerviakovianum* as one species. He believes *richteri* is a natural hybrid, probably

pearceii x boissierianum. There is a lot of disagreement about taxonomy in the *caudatum* group. He prefers that *Mexipedium xerophyticum* be considered a *Phragmipedium*. By showing pictures of many species in their native habitat and discussing the conditions there, he gave a great deal of information that is helpful to us in growing them.

Following the talks there was a panel of excellent growers who answered questions from the audience. They emphasized the need for good quality water and lots of air movement and urged growers to inspect their plants every day.

A buffet dinner and auction capped a very enjoyable and productive day.

Barbara Tisherman

SOA Membership

If you receive a membership renewal form with your newsletter, your membership is up for renewal within the next three months. Please fill out the form and mail it to our membership secretary, Jean Metcalf, 2323 Edinboro Rd. GH#6, Erie, PA 16509. Questions about your membership? Jean can be contacted at orchidiva@yahoo.com.

Vanishing Beauty: Native Costa Rican Orchids, Vol. 1

Volume 1 in a series of 3 by Franco Pupulin and collaborators (Editorial de la Universidad de Costa Rica) now is available in both English and Spanish editions. This volume provides a photographic documentation of species *Acianthera* through *Kegeliella*. It's a superb compendium of excellent images, the majority produced by Franco, eight by Kerry Dressler, and two by Diego Bogarin.

Costa Rica is home to some 1,400 identified species, with slipper orchids limited to *Phragmipedium caudatum*, *longifolium*, and *warscewiczianum*. The *Orchid Digest* (April, May, June 2005, pp. 86-91) and *The Australian Orchid Review* (October/November 2004, pp. 19-21 and December 2005/January 2005, pp. 8-15) have articles addressing the debates over classification of these slippers and *Phragmipedium chinela*.

However this issue is resolved, new species are being discovered in Costa Rica (with recent additions to the species *Sobralia*) on an ongoing basis. New discoveries will continue, as the University of Costa Rica, and the Lankester Botanical Garden are committed to discovery and documentation, and the Costa Rican government is committed to the preservation of land mass and its flora and fauna.

These commitments notwithstanding, This volume and those to follow clearly recognize the fragility of all flora, and orchids in particular. Not a "coffee table" publication, this series is a major catalog of images of Costa Rica's potentially vanishing beauty. Ordering information can be found at <http://www.jardinbotanicolankester.org>, in the JBL Press section.

Russ Tyler

AOS Members Meeting 2007

The Spring AOS members meeting will be held in Arlington, TX (Dallas-Fort Worth area) on May 2 - 6 and is sponsored by the Fort Worth and Greater North Texas Orchid Societies. The SOA will again sponsor a speaker for the event. Hadley Cash will present a lecture on White and Pink *Paphiopedilum* Breeding on Saturday, May 5, at 1:00 PM. There will be an open board meeting on Friday, May 4 at 4:30. All SOA members and others interested in slipper orchids are welcome to attend. This gives us a chance to meet and exchange ideas about the SOA and receive input from our members about what their interests are and ways to improve the organization.



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In each issue of our newsletter we like to recognize and thank our supporting members. Each one of these businesses continues to support our efforts to have an outreach program for all slipper growers. If you are interested in becoming a supporting member, please contact Jean Metcalf at orchidiva@yahoo.com. We also hope that each of our members will support these businesses.

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