



The Slipper Orchid Alliance Newsletter

Volume 6, Number 3

Fall 2005

Those Fascinating Cyripediums

Cyripediums are mainly temperate terrestrial orchids of Asia, Europe and North America. China is the centre of generic diversity where, according to Cribb (1997) in "The Genus Cyripedium," two-thirds of the 45 species have been observed. One of the most common in cultivation is the Formosa endemic *C. formosanum*. The leaves of this species are distinctively fan-shaped, appearing as if they had been sheared at the tips. Cribb considers *C. formosanum* distinct from *C. japonicum*, although sometimes the names are confused. Chen Sing-Chi compared the orchid floras of temperate North America and Eastern Asia in a paper published in the Annals of the Missouri Botanical Garden 70: 713-723, 1983, where it was pointed out that more than two-thirds of the temperate North American genera have a phylogeographic link with eastern Asia orchid genera. Two Cyripedium species pairs are linked. The Ram's Head Lady's-slipper, *C. arietinum*, is found in eastern North America while its Asian counterpart, *C. plectrochilum*, is found in eastern Asia. The Showy Lady's-slipper, *C. reginae*, of eastern North America has as an Asian counterpart, *C. flavum*. Molecular evidence supports the close relationships between Asian and North American taxa. What led to this disjunct distribution is not clear, but it seems that these pairs

and those of other orchid genera share a similar distribution.

About 25% of the genus is known from North America. Three species are reported from Mexico, including closely related yellow-flowered *C. molle* and *C. irapeanum*. Eleven other species are found in the continental United States, eight of these also being found in neighbouring Canada. These include: *C. acaule* (Pink Lady's-slipper), a common species from acidic locales in eastern North America; *C. candidum* (Small White Lady's-slipper), a threatened to endangered species in both the USA and Canada where agricultural conversion of its preferred moist prairie habitat has led to the loss of populations; self-pollinating *C. passerinum* (Sparrow's Egg Lady's-slipper), which has a northerly distribution; and *C. montanum* (Rocky Mountain Lady's-slipper), which is known from the western mountains.

Cyripediums are commonly known as "slipper orchids" because of the characteristic slipper-shaped lip or pouch. Cyripedium flowers have two anthers located on either side at the foot of the column and a sterile anther (staminode) which faces outwards partly blocking the pouch entrance. The genus *Cyripedium* is temperate in distribution while its counterpart, *Paphiopedilum*, is tropical. Members of the genus *Paphiopedilum* have stiff leaves which are not deciduous, whereas members of the genus *Cyripedium* have soft, plicate deciduous foliage. Plants of the Stemless or Pink Lady's-slipper (*C. acaule*) and the western North American Clustered Lady's-slipper, *C. fasciculatum*, have just two leaves nestled close to the ground, but most others have three- to eight-leaved stems. Cyripediums are long-lived rhizomatous perennials. They may grow singly or as clumps of stems connected by a stout rhizome. In the autumn, a perennating bud can be seen developing at the base of the present year's stem. The size of the bud is often a good indicator as to whether next year's shoot will bear flowers. Roots are typically long, hairy and somewhat fibrous. The roots are sometimes heavily infected with mycorrhizal fungi, but the fungi may be actively growing only for part of the year. Species which prefer "wet feet" include the Showy Lady's-slipper, *C. reginae*, which can be found in moist peatlands, wooded fens and similar habitats that are often seasonally flooded. If the habitat becomes

SOA Membership

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uncharacteristically dry, especially in spring, shoots of *C. reginae* may emerge late, out of phase with each other, or not at all. Later emerging shoots are smaller and brighter green than those that emerged earlier; they are unlikely to flower. If most shoots emerge late, reduced leaf surface area and less time to accumulate resources may lead to an eventual decline in plant vigor.

Faded *Paphiopedilum* flowers separate from developing ovaries, but after a *Cypripedium* flower is pollinated and has faded, it remains attached to the developing ovary as a withered



Cyp. fasciculatum

remnant. The Clustered Lady's-slipper, *C. fasciculatum*, bears its small clustered flowers close to the ground, but after pollination the flower stem elongates to hold the fruits high above the foliage. We see this to a lesser extent with *C. acaule*, where the stem elongates for about three weeks after the flowers open. Many *Cypripedium* species are spectacular in bloom with flowers lasting up to four weeks. The most widespread group in North America is the yellow-flowered lady's-slippers, *C. parviflorum* and its several varieties. This species is known from northern Ontario in Canada to Texas and from Newfoundland and Labrador in the east to Alaska and British Columbia in the west. With such a wide distribution, geographical separation of members of the yellow-flowered group has given rise to forms that vary in plant characteristics and preferred habitat, and in flower size, color, shape, scent, and pollinators. Variability in the yellow-flowered Cypripediums can be as great within as between populations. Some large-flowered specimens of *C. parviflorum* var. *pubescens* are found growing in eastern deciduous forests. We have observed that flowers of the large yellow lady's-slipper can remain fresh up to 23 days (Light & MacConaill, 2002). Flower longevity has been correlated with the cumulative minimum daily temperature. A majority of flowers faded when 140-150 degrees Celsius had been accumulated.

Cypripediums attract pollinators but seem to offer no

reward to flower visitors. Various native bees and bumblebees are frequently cited pollinators, but hoverflies and even beetles have been known to visit flowers. When

an insect enters a lady's-slipper pouch, it finds it difficult to exit except by passing either of the two anthers located on either side of the stigma at the back of the flower. The insect



Figure 1

must be appropriately sized to enter and exit a pouch. Effective pollinators must be able to collect pollen as they emerge and be able to deposit it on the stigma as they pass beneath (Fig. 1). If an insect visitor is just the right size and



Figure 2

Upcoming Events

AOS Members Meeting

October 12 - 16, 2005

Doubletree Hotel

Rohnert Park, CA

Sponsored by the Sonoma County Orchid Society. SOA will sponsor Nick Tannaci whose talk will be 'Brachypedium Hybridizing and Culture'.

8th Slipper Symposium

November 5, 2005

Kissimmee, FL

Check out the information on their website at <http://home.cfl.rr.com/slipperorchids/>

Paph Guild Meeting

The Inn at Morno Bay

Los Osos, CA

Contact Patti James at 805-528-1417 for more information.

strength it can exit a flower, but while doing so picks up some pollen on its body (Fig. 2). If that insect visits another flower, some of the pollen may be scraped onto the stigma as the creature passes through the flower. After pollination, fertilization is delayed for about 25 to 35 days. The ovary swells and elongates, but if fertilization is unsuccessful the



Cyp. arietinum

ovary then yellows and dries up. Seeds of many species take about 70 days to mature, but capsule dehiscence may not happen for another month or so. *Cypripedium* seeds are notorious for being difficult to germinate. Embryo culture has been employed successfully to overcome this hurdle.

Cypripedium parviflorum has been used as the seed parent in 10 of the 11 registered hybrids using this species. Four of six hybrids registered having *C. parviflorum* var. *pubescens* as a parent have variously been made with it as the seed parent. Other horticulturally popular North American species used in hybridization include *C. acaule*, *C. candidum*, *C. montanum* and *C. reginae*. One beautiful hybrid cultivar is *Cyp. Maria 'Glasgow'* (*parviflorum* × *macranthos*). The name synonym is *Cyp. Gisele*. *Cypripedium arietinum*, *C. californicum*, *C. fasciculatum*, and *C. guttatum* present intriguing horticultural possibilities but have not as yet been registered as hybrid parents, although most are available as artificially propagated stock (Figs. 3, 4). One useful conservation initiative would be to identify and document the variation in fertility and other characteristics of existing populations. Without an understanding of the variation within and between populations, we risk losing a precious resource for future conservation and horticultural initiatives.

References:

Light, M. H. S. and MacConaill, M. 2002. Climatic influences on flowering and fruiting of *Cypripedium parviflorum* var. *pubescens*. Pp. 85–97 in P. Kindlmann, J. H. Willems and D. E. Whigham, eds. Trends and fluctuations and underlying mechanisms in terrestrial orchid populations. Backhuys Publishers, Leiden, The Netherlands.

Marilyn H. S. Light
Gatineau, QC Canada

Marilyn Light has been raising tropical orchids since 1970 and has registered 20 hybrids. She is author of 'Growing Orchids in the Caribbean', other books, chapters, and numerous scientific and popular articles. Marilyn also leads a monthly discussion at www.orchidsafari.org. She is Conservation representative for the Canadian Orchid Congress, the Ottawa Orchid Society, and chairs the North American Region and Education Committees of the Orchid Specialist Group, Species Survival Commission. Her interest is in long term study of native orchid populations to better understand the impact of weather and other factors on orchid survival.

How Well Do Your Slippers Fit?

That is, how well do your Slipper Orchids fit in with the rest of your Orchids? They are different, everyone can see that. But how do they really differ from the rest of the Orchids? The genera commonly referred to as the Slipper Orchids are *Cypripediums*, *Paphiopedilums*, *Phragmipediums*, and *Selenipediums*.

One difference is that no Slipper Orchid, tropical or from the more temperate zones of our earth, produces pseudo-bulbs. Most are terrestrial; even the species which grow on trees only do so when there is sufficient detritus, that is, decayed plant material available to protect the root system. The Slippers of northern areas, some as far north as past the arctic circle, are deciduous and survive the winter underground, in temperatures as low as -40° C.

Where they really differ is in the structure of the flowers. To be as different as they are they must have split off from the rest of the Orchids many million years ago. To compare them, place a *Phalaenopsis* and a Slipper Orchid side by side and identify the different parts as they are mentioned in this article. Perhaps wait until one of your Slipper Orchids drops a flower so that you can cut it in half to get a better view into the flower.

Just like other orchids, the slippers have all the basic flower parts that differentiate orchids from all other flowering plants. There are petals, sepals and a central column, all arranged in front of the ovary (seed bud, inferior ovary). Of the three petals, one is converted into a lip, a very deep pouch-like structure - another of the differences. The pouch is an insect trap that lures the vectors by color and/or scent to pollinate the flower. The slipper-like structure guides these trapped insects toward the end of the pouch and provides two escape routes, past the female parts and then past the male pollen. To the best of my knowledge, no food is provided for the insects.

Of the three sepals, one is very visible; it is the top-most part of any slipper orchid and is referred to as the dorsal sepal. It can either stand very erect, or in the case of some of the northern terrestrial slippers, it can bend over the pouch. In any case it is a prominent structure. The other two sepals are fused into one part which is directly behind the slipper (synsepalum / syn = lat. together) - this is a third difference. Occasionally the synsepalum is split into two parts which confirms this statement.

The central column in an orchid flower is where all the reproductive parts are located. This is where the slippers differ mostly from other orchids. To make a comparison look closely at the *Phalaenopsis* flower, especially the central column, just above the lip. On the very tip just below the anther cap (a thin tissue) is the pollen mass. Just behind, divided by a membrane, is the female part of the flower. This arrangement prevents self-pollination and allows an

incoming insect to deposit pollen from another *Phalaenopsis* flower and thus fertilize the flower. When said insect backs out of the flower it will strip off the anther cap and pick up pollen from the flower, to carry it hopefully to the next *Phalaenopsis* flower. Please note, the pollen is picked up and deposited as a whole package. This is true for all non-Slipper Orchids.

A Slipper Orchid differs remarkably from other orchids in the reproductive department. The central column has the female part right on the very front of the column, and the column is bent backward down toward the back of the pouch. There are two pollen masses at the back of the column, that is, on either sides of the column. The pollen is similar to the pollen in a lily flower, sticky and waxy in consistency. This pollen is not removed in one package; rather, pollinating insects brush some off every time when they visit a Slipper flower. Many insects can take pollen from one flower. This is another very important difference.

To propagate Slipper orchids asexually is by division only. To date it has been very difficult to produce these plants from tissue culture. Seed propagation is the only reliable method. Whereas most other orchids can readily be multiplied by other than seed propagation, this is also an important difference from other orchids.

Where Slippers are the same as all other orchids is in the seed department. The seed capsule is divided into three compartments, and the seeds are produced at several hundreds of thousands per seed pod. These seeds are very small and are wind dispersed. They contain no nourishment for the young plants, only genetic information. As with all other orchids, slipper seeds need fungi to help germinate the seeds and nourish the seedlings.

I hope this information is of interest to all, especially the new orchid hobbyist, and I further hope that it will induce everyone who has never grown Slippers, in the house and in the garden, to try some plants. With the diversity of Slipper Orchids available, there is a plant appropriate for just about every growing situation. To start, buy the new plants, especially hybrids, when in flower, so that you can see exactly what you are getting. Also, consider plants with attractive foliage, so as to enjoy them when not in flower.

Just as Cinderella found a slipper that fit her, I'm sure that you will also find a Slipper Orchid that fits into your life and bring happiness and enjoyment forever.

As with any general statements made about orchids, there will be differences from the above made claims. These will be left to the reader to research and marvel at. Happy growing.

*William Bischoff – President
Vancouver Orchid Society*

Phrag. kovachii Update

When I first heard about *Phragmipedium kovachii* and saw the first photographs I really did not believe that a Phrag with such large round flowers (as big as a *Cattleya*) existed. It took me a few months to believe it was true, and even then I had my doubts. Time and more information provided the truth, and I was and still am bowled over that such a slipper orchid exists.

I started receiving phone calls offering me this species, but I knew it was only trouble if I accepted the offers. I even had people call me and ask my opinion as to whether or not they should purchase plants offered to them. I remember the prices being \$350.00 to \$10,000.00! Of course I said that it was not a good idea and that people should wait until the plants became available legally.

I won't go into the details of how the plant was discovered, how it was named or even who got in trouble with the authorities for having the plant. People did make mistakes. Those stories have all been told before, and my version would be just that, my version. Stories change as they are told, and I think it best if I try not to put my spin on the events and the people involved. I will say this, if the plant were an obscure pleurothalid with tiny flowers that were colored green, I wonder if the world would have cared so much. Because *kovachii* flowers are so sexy in terms of size and color, humans believe it is more desirable (to us) and so we value the plant more. That, of course, leads to the wildlife authorities wanting more in terms of controls and fines. In reality, though, the obscure green pleurothalid could have more importance to the ecosystem it occupies a niche in.

Coryanthes are unusual orchids that exude chemicals that the male Euglosseine Bee requires in order to mate. Without these chemicals there will be no new generations of bees. It turns out that in Brazil these bees are the ones that pollinate Brazil nut trees. Without the pollinators there are no Brazil nuts. Deforestation is now so commonplace in areas that have Brazil nut trees that the *Coryanthes* are in some cases wiped out, and so the Brazil nut flowers are not getting pollinated. This has a huge effect on the rest of the forest wildlife. Macaws, monkeys and other animals now do not have the food that they were once dependant on. Their numbers are declining. Humans that collect the Brazil nuts are losing their income as well. I mention this because, as you know, *Paphs* and *Phrags* are on the CITES Appendix I list and *Coryanthes* are on the CITES appendix II list. Shouldn't certain important *Coryanthes* be on the appendix I list as well? (That's my 2 cents worth.)

I waited and waited and tried to make arrangements to buy some legal flasks of *kovachii* from seed. No luck. Then one day Manolo Arias from Peru Flora e-mailed me a price list. I remember Manolo from long ago in 1988 when I went to Peru to collect *Phragmipedium caudatum*, *boisserianum*

and *wallisii*. Now he is working with his father, Manuel Arias, and has his own nursery. He has been working diligently with the Peruvian authorities to raise legal seedlings from five plants that they were given permission by the Peruvian authorities to collect. His nursery and all of the Arias family nurseries have undergone careful inspections by INRENA (the Peruvian equivalent to the U.S. Fish and Wildlife service) and have finally received approval to sell *Phrag. kovachii* in flask. I know the U.S. Fish and Wildlife Service also worked with INRENA, and the officials of CITES in Switzerland gave the approval for export *in vitro*. The five clones that Manolo was allowed to self, sib or create hybrids with are: Roseline,

I have been a close friend with Chuck Acker of Orchids By the Ackers in Madison, Wisconsin for many years. He has developed a keen interest in *Phrags*. And so in April of this year we decided to travel together and bring some flasks back. It is not easy to do! First you have to meet up and find an airport on the return that will allow you to clear customs and agriculture as you come into the country. Some ports of importation into the U.S. will not allow you to do this. We flew from Minneapolis and Madison to Miami and then to Lima, Peru. This was an all-day affair, as I had to wake up at 5:00 AM and we didn't reach our hotel until after midnight. Then we had two days in Lima to visit Manolo's nursery and laboratory and choose our flasks. The fourth day was another full travel day; after getting up at 3:30 AM I made it home by 11:00 PM.

We observed an excellent lab with good technique as well as careful cultivation of seed-grown plants in the nursery. We also got to see the parent plants of *Phrag kovachii* at the nursery, and we were very impressed by the length and width of the leaves. Many leaves were 3 inches wide and 18 to 24 inches long. We could see the old flower spikes and how thick they were. The plants were not flowering, as it was the wrong time of year. We did see one of the flowers preserved in a block of acrylic resin, and it was nearly eight inches across. We did observe that the plants are very slow in the flask, and we brought back flasks with small seedlings not yet ready to come out of bottle.

We stayed in a beautiful hotel in Mira Flores, a suburb of Lima, and were within walking distance of the Indian markets and fine restaurants. We ate well the night before we left.

The paperwork was amazing, and I had a small phonebook's worth of papers by the time it was all over. It took Manolo till 1:45 in the morning before we left to get all of the permits from the authorities. We also had to sign an agreement with INRENA that we would not sell or donate the plants for a period of two years. This agreement is to punish those who have the plants illegally and may already have flasks. I did not like this agreement, but I do understand INRENA's reasoning and will abide by the contract. I think it would be better just to keep track of everyone who buys the species and perhaps hybrids made with it and every three

or four months send INRENA and the U.S. Fish and Wildlife Service a list of those who purchased them. This could go on for a period of five or seven years.

Transporting the flasks was a nightmare as well. Manolo is an industrial designer and made us a beautiful box that was padded and had a wide strap for carrying. Even so it would have to be x-rayed, carried around airports and exposed to all manner of jostling. We got on an American Airlines flight coming back, and I put the box of flasks in the overhead compartment in the center of the plane. We took off and suddenly the compartment started shaking and vibrating wildly! I could just imagine what the seedlings might look like, one mass of agar and leaves. I quickly transferred the flasks to the compartment directly over our side aisle seats and they were fine.

We arrived in Miami and getting my luggage was nearly as traumatic. A large man jumped across my box of flasks and then began throwing luggage off the carousel toward me. I was sure the flasks would be crushed. I then had to clear customs and agriculture before catching a flight home. I declared the flasks and went to the customs line to get permission to have my broker take the flasks to agriculture for inspection, get my paperwork stamped and have them released to my care. This seemed simple, but I could find no one at the customs counter in Miami who could speak English! Finally, after trying to talk with three or four customs officers, a supervisor who could speak English was found. He asked me what I had and I said flasks of orchid seedlings. He then asked if they were in vitro and I said they were. He said that I was free to go. I said wait a minute, these are supposed to go to agriculture for inspection, as this was a new species and I wanted stamped paperwork. I did not want any problems. He said "Oh, is this the new *Phragmipedium* species?" I said yes and then he said "I understand." I had the papers stamped and now the flasks are growing nicely in Orchids Limited's Lab.

I will write an article in one year on how to grow *Phrag. kovachii* properly. Our seedlings (sibling crosses) will be available in late April of 2007 unless INRENA wants to change the terms of the contract. I can't wait to see what later hybrids will look like.

Keep dreaming of big deep purple or coral colored *Phragmipediums*.



Phrag. kovachii 'Goliath' and 'Jewel'
Photography by Manolo Arias



Phrag. kovachii 'Rosaline'
Photography by Manolo Arias



Phrag. kovachii 'Tupac Amaru' and 'Maximus'
Photography by Manolo Arias



The leaf of a Phrag. kovachii plant
Photography by Jerry Fischer



Paph. callosum var. sublaeve 'AOC' AM 88

Not 'Just Another Callosum'

At first glance one would think that maybe the clonal name for *Paph. callosum* 'AOC' would be 'Another Old Callosum'. But one would be wrong. The owner of the Paph and the Atlanta Orchid Company is Jeff Whitfield of Conyers, GA. Jeff took his *Paph. callosum* to the Atlanta Judging Center earlier this year for the monthly judging. This particular *callosum* had many of the attributes judges look for in the species: a large, flat dorsal sepal without the "Dari-O" twist at the top; long, wide petals with no recurving at the tips; good alignment and great color. The only question was if this was a true *Paph. callosum*.

Jeff sent the plant off for identification and it was indeed a *Paph. callosum* var. *sublaeve*. Just to satisfy his own curiosity, Jeff went on a mission to find out the background of the plant. The plant was from a flask he had purchased and he eventually traced the flask back to Paphanatics and Norito Hasegawa. Norito stated that it was from ninth or tenth generation line breeding at Paphanatics. Jeff said that so far this was the best *callosum* that he had bloomed from the flask and he is looking forward to using it in his own breeding program at Atlanta Orchid Company.

A Checklist for the Newer Paphiopedilum Hobbyist

October - December

(Northern Hemisphere)

PLANT GROWTH AND BLOOMING CYCLE: By October the new growths have matured, and complex standard hybrids are showing buds in the leaf axils. Many will be in flower by December, with the blooming season extending through March. Paphiopedilums are never completely dormant, but their growth is slow in winter.

WATERING: As the weather cools, the plants dry slower and need to be watered less frequently. Adjust the watering frequency, not the amount. Water early in the morning to allow the plants to dry by nightfall. To promote healthy roots, apply the water liberally, allowing it to run from the drainage holes. This technique assures that the residual fertilizer salts are leached out, and that the mix is evenly moistened and aerated. Paphiopedilums have no pseudobulbs and should never go completely dry nor stay soggy for a long time. Keep in mind that the small pots dry faster and may need more frequent watering. If in doubt, check the mix with your finger: it should feel slightly moist about one inch below the surface just before watering.

FEEDING: Continue using a balanced, water soluble formula for orchids, such as 20-10-20 or 20-20-20 (diluted to one quarter strength of manufacturer's recommendation). Paphs prefer frequent applications of a weak fertilizer solution, since their roots are sensitive to salt burn. Ideally, you should fertilize after every watering (never fertilize dry plants). You may skip the fertilizer once a month to leach the residual salts from the mix. Some parvisepalum species and *P. rothschildianum* benefit from a brief rest (no fertilizer in December).

LIGHT: If you added extra shading to keep your plants cool in summer, you can safely remove it by the first of October. Late fall and winter days are short and the light levels at their lowest. Paphiopedilums thrive at lower light levels than most orchids (1000 foot-candles). However soft, dark green leaves and weak, long flower stems may indicate that the plants are not getting enough light. Growers in northern regions often use artificial lights to extend natural light hours and supplement light intensity.

TEMPERATURE: Monitor the greenhouse temperature using a min-max thermometer, and check the heating system often. Make sure to service the heater by early October, and have a backup heater in case of failure or for extra heat on cold nights. Paphs prefer temperatures of 58°F to 62°F (14°C to 17°C) at night and 80°F (27°C) in the daytime. However

they tolerate occasional exposure to 40°F (4°C) and even lower.

GROOMING AND DISEASE CONTROL: Stake flower spikes loosely while the buds are developing. Flower buds tend to "stretch" toward the light. To prevent stems from twisting, do not move or turn the plants while they are in bud until the flowers are fully open.

Provide good air circulation, keep the nighttime temperature on the warm side and water early in the day to minimize outbreaks of bacterial and fungal diseases. Tell-tale signs of infestations may be spotting or rot. Brown rot is the most common problem and is quite contagious. It is manifested by large, brown areas with foul smelling droplets on the underside, which spread rapidly throughout a leaf or an entire growth. Isolate the diseased plant, remove the entire affected leaves and growths, and treat with a fungicide/bactericide. Cinnamon powder is a very effective natural fungicide that can be applied over several months without hurting the plant. Sprinkle it directly on the plant, and repeat the treatment whenever the powder is washed away.

During cool weather the insect infestations slow down. Control any outbreaks promptly to minimize over-wintering larvae and eggs and avoid serious outbreaks the following spring. Check the plants often for signs of snail and slug damage and apply granular bait.

HIGHLIGHTS:

SERVICE YOUR HEATING SYSTEM well before the first frost. MONITOR THE TEMPERATURE closely. Watch out for SNAILS and BROWN ROT. WATER EARLY in the day and provide GOOD AIR MOVEMENT. Stake the flower spikes and ENJOY THE FIRST BLOOMS of the season.

Helen Congleton

Authors Rewarded

Have you ever thought about sharing your knowledge or experiences with orchids? Have we got a deal for you! Every author of a significant article published in the SOA Newsletter will receive a free one-year membership. Commercial members will receive \$25 credit toward their Supporting Member dues of \$50. As you no doubt have noticed, we include many color pictures in every issue. Below are just a few ideas that may stimulate your interest in writing. And you do not have to be concerned about putting your thoughts into perfect form; all articles are checked for grammar, punctuation, spelling, typographical errors, etc.

No one to my knowledge ever complains about too many articles on culture. There are so many growers raising orchids in different conditions and in different ways who can offer tips, whether their experiences deal with windowsills, basement, greenhouse or outdoors. Tell us what works for you (and sharing what has not worked is equally important). Would you be willing to answer culture questions?

New species are still being discovered and new hybrids are being created by the hundreds every year. What can you tell and show us? Have you been studying certain trends in hybridizing?

Do you have a favorite slipper orchid that you have studied in depth and can enlighten us about?

There are many individuals who have played important roles in the slipper world. Unfortunately most of us have not and will not have the opportunity to meet them in person, but the pages of our newsletter can bring them into our homes through personal profiles, interviews or other biographical background. This is a wonderful way to recognize outstanding contributions to the orchid world.

Have you attended a meeting or event that yielded much helpful information or was particularly interesting because of its location or content? How about your visits to orchid nurseries? Have you had the excitement of viewing or collecting orchids in the wild?

At your society meetings and in publications that you read you must hear or see topics that would be relevant to our members. (We will be glad to request permission for reprinting an article from another publication.) Judges, particularly when they were students or probationary judges, may have presented talks or papers that would make excellent articles. Publishing the results of their hard work gives them additional, well-deserved recognition. We need your help in identifying new sources.

Have you taken or seen pictures of outstanding slipper orchids that you think deserve national recognition? Or if you have seen a flower that you feel is noteworthy let us know, and we will request a picture. Whenever we have space we like to include photographs of very special orchids (in-

cluding your own) that otherwise our members will never see.

We especially would like to hear from our members in other countries.

The above are just suggestions, and I am sure you can think of many more. Our articles range from the very scientific to the entertaining or human interest approach. If there is a certain subject that you would like to see addressed, please let us know.

We want to include in our newsletter information about upcoming meetings or events of interest to slipper enthusiasts and about orchids which have been awarded our SOA trophy, but those short articles will not receive the credit of a free membership.

We are proud of the wide variety of articles that we make available to our membership. To maintain our standards we need your help. Please contact Barbara Tisherman at btisherman@aol.com or Janette Harris, Editor, at jaharris@surry.net with your ideas and thoughts and most important, your articles.

Barbara Tisherman, President

Pahiopedilum henryanum

Pahiopedilum henryanum was only described in 1987, so breeders have not had much time to do their work; there are, though, at least 18 Paph hybrids registered to date with *Paph. henryanum* as a parent and one intergeneric hybrid, *Phragmipaphium Charming Daughter* (x *Phrag. longifolium*), so the toothpicks have been busy.

The introduction of *Paph. henryanum* was controversial, to say the least, featuring an unseemly squabble between Emil Leuckel, President of the German Orchid Society, and Guido Braem, who is no stranger to controversy. Braem rightly claimed to have published the description of this species first, as *Paph. henryanum*, while Leuckel published it as *Paph. dollii*, claiming that Braem's publication was invalid. While Braem clearly had priority, the "Henry" who was being honoured by his choice of name was none other than Henry Azadehdel, who was in deep trouble, having been convicted of smuggling orchid species on his travels. So, the International Orchid Commission, against its better judgment, accepted Leuckel's arguments and the name *Paph. dollii*. The first few hybrid registrations, dating from 1989, were made using that name, until two years later when the IOC reversed its decision and the RHS changed all the registrations to show *Paph. henryanum* as a parent.

Paph. henryanum has certain striking characteristics which excited breeders when it was introduced. The bright

pink pouch seems to be dominant in most of its hybrids and is unusual because of the way the colour wraps around the pouch almost seamlessly, whereas in most other *Paph* species the colour is an overglaze on the front of the pouch only. The boldly spotted dorsal sepal, which gives it the look of a complex hybrid, is also passed on to its progeny. The petals are slightly ruffled along the edges and are usually pinkish in colour. They are often, but not always, spotted or speckled to some degree.

A fine example of the species is *Paph. henryanum* 'King Kong' AM/AOS with good form and size. Another is *Paph. henryanum* 'Chunky' HCC/AOS; this flower has more spots on the petals. A rather strange-looking flower is *Paph. henryanum* var. semi-album 'Gondaisouzu' S/CSA. While this has a pink pouch, the sepals and petals are clear green and the segments seem to be excessively ruffled.



***Paph. henryanum* 'Chunky' HCC 76**
Paphanatics, unLtd.

Paph. henryanum has been placed in the section Paphiopedilum of the genus Paphiopedilum (with the *Paph. insigne* group), so we will commence the study of hybridizing with this species by looking at some of the crosses that have been made within this group. Paphiopedilum hybrids that are made within a section are usually more consistent and have fewer genetic problems than hybrids with members of other sections.

Paph. Tyke is the cross with *Paph. barbigerum*. The influence of *Paph. barbigerum* seems to dominate the form of the flower, but the dorsal sepal is boldly spotted and the pouch is pink.

(*Paph. hirsutissimum* x *Paph. henryanum*) results in a

flower that looks like *Paph. hirsutissimum*, although smaller, but with some colour influence from *Paph. henryanum*. In this case the bold spots on the dorsal sepal have been reduced to speckles.

Paph. Doll's Kobold is the hybrid with *Paph. charlesworthii* and has produced a flower which is strongly *Paph. charlesworthii* in shape but with a pink pouch and a



***Paph. Diane Vickery* 'Equanimity' HCC 78**
Dr. and Mrs. Jon Vickery

well-spotted dorsal sepal. There was a fine flower that won the medal for the Best Complex Hybrid at the WOC in Brazil. Evidently, the complex hybrid "look" of the flower outweighed the fact that it is a primary hybrid! It retained the white staminode from *Paph. charlesworthii*.

There seems to be a pattern emerging in these crosses, in that the colour influence of *Paph. henryanum* seems to be dominant but the form is subordinate to that of the other parent.

Crosses with the Cochlepetalum section have proven to be successful. *Paph. Diane Vickery*, the hybrid with *Paph. glaucophyllum*, has received several AOS awards. The flower of the clone 'Equanimity' HCC/AOS shows good contrast between the pink pouch, the boldly spotted green dorsal sepal and the pink petals with distinct black spots. *Paph. Diane Vickery* 'Jamboree' HCC/AOS is a well-shaped flower with a fine dorsal sepal. The sequential-flowering habit has been retained. *Paph. Isabel Adjani* (x Utgard) is a related cross, *Paph. Utgard* being *Paph. (glaucophyllum* x *chamberlainianum*). It looks similar to *Paph. Diane Vickery*.

Paph. Pebblepath is another hybrid which has received AOS awards. This introduces genes from *Paph. rothschildianum* as it is the cross with *Paph. Transvaal*

(*glaucophyllum* x *rothschildianum*). The flowers are larger and bolder; an example is *Paph.* Pebblepath 'Glendora' HCC/AOS. Another example with wider segments is the clone 'Boulder Springs' HCC/AOS.

Paph. Tropical Magic is the cross with *Paph. primulinum*, an attractive combination of yellow and pink. This hybrid also has the shape and the sequential-flowering habit of its *Cochlepetalum* parent.

In general, breeding with the Barbata section has not produced consistently good results, and in any cross of this type there will be some flowers with less than desirable form. *Paph.* Graham Robertson (x *sukhakulii*) is an attractive hybrid, combining the spotted dorsal sepal of *P. henryanum* with the spotted petals of *P. sukhakulii*, and a rosy pink pouch completes the picture.

Paph. (Makuli x *henryanum*) involves three Barbata section species - *Paph. lawrenceanum*, *Paph. callosum* and



Paph. Graham Robertson 'Jamboree' HCC 76
Paphanatics unLtd.

Paph. sukhakulii. The resulting hybrid has the rosy pink pouch of *Paph. henryanum* and a speckled dorsal sepal, but the form indicated a squabble between the four species with no clear winner!

Some breeders have crossed *Paph. henryanum* with vinicolor or flame Paphs with the aim of introducing spots into the dorsal sepals. Some interesting hybrids have resulted from this line of breeding. *Paph.* (Red Glory x *henryanum*) has produced some richly coloured flowers with smooth "hot-pink" pouches, spotted petals and the desired spotted dorsal sepals. One clone showed a wide dorsal sepal with a cluster of raised black spots, each of which was surrounded by a halo effect. The unspotted border on the dorsal sepal set

off the spots nicely. An added bonus was the good form and the wide spotted petals. As with similar crosses there will be a number which are not as good, but it is worth-while searching for those that are.

Some breeding has been done with the *Brachypetalum* section. *Paph.* Wossner Henrycolor is the cross with *Paph. concolor*. This is an elegant flower with deep pink petals, pale pink pouch and a yellow dorsal sepal heavily spotted with purple.

Paph. (henryanum x *godefroyae* var. *leucochilum*) is interesting because of the colour inheritance. Both of the parents are dominant for pouch colour, but in this flower *Paph. godefroyae* has completely wiped out the pink pouch of *Paph. henryanum*, resulting in a flower with a white pouch, a white dorsal sepal with heavy burgundy spotting and wide pink petals that are also spotted.

Paph. Governor Patrick Henry is the cross with *Paph. bellatulum* and is the last hybrid to be discussed. One clone had good, wide segments and rich colour. The dorsal sepal was well-shaped and boldly spotted burgundy on pale green. The pouch was a solid, glossy pink and the petals glossy red, spotted burgundy. The stem was tall and straight, unusual for a *Paph. bellatulum* hybrid. This seems to be a cross with good potential.

So, much has been done since the discovery of *Paph. henryanum*, and there are more hybrids in the development stage. We can look forward to compact, floriferous and brightly-coloured flowers with *Paph. henryanum* as a parent.

Judy Adams

Judy Adams, a member of the SOA, has been growing Paphiopedilums for twenty years. She is an accredited judge in the Toronto Judging Center and is the Eastern Canada Orchid Society Librarian and Show Chairman. This article was a presentation given by Judy at the May, 1998 AOS judging seminar in Ann Arbor, Michigan. It is reprinted with permission from the Canadian Orchid Congress Newsletter.

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