

The Journal for Gesneriad Growers Gesneriads

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Sinningia speciosa unnamed Charles Lawn hybrid, grown and photographed by Eileen McGrath. See page 8.

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The Gesneriad Society, Inc.

The objects of The Gesneriad Society are to afford a convenient and beneficial association of persons interested in the Gesneriad Plant Family (Gesneriaceae); to stimulate a wide-spread interest in; to gather and publish reliable information about the identification, correct nomenclature, culture, propagation, and conservation of gesneriads; and to encourage the origination, introduction, and conservation of species and cultivars.

The Gesneriad Society, Inc. is the International Registration Authority for the naming of gesneriad cultivars excepting those in *Streptocarpus* section *Saintpaulia*. Any person desiring to register a cultivar should contact Irina Nicholson, 2512 South Balsam Way, Lakewood, CO 80227 USA hybridregistrar@gesneriads.org.

A Message from the President



Experiment with new plants and new ways of growing them

CONGRATULATIONS AND THANKS TO ALL THOSE who participated in the 2020 Virtual Flower Show. It was a beautiful and educational representation of our plant family. Thanks to Paul Susi, Karyn Cichocki, Paulo Castello da Costa, Hung Nguyen, Alcie Maxwell, Jeanne Katzenstein, Dale Martens, Julie Mavity-Hudson, and Peter Shalit, for all of their countless hours of work to make this possible. Plans are underway to make this an annual event.

Congratulations also go to Talita Kely Bellonzi for being chosen to receive the Nellie D. Sleeth Scholarship this year by the Endowment Fund Committee chaired by Dr. Eric Roaldson. Her work will be on the “*Paradrymonia* alliance” clade and its relations with *Nautilocalyx*.

Dr. Alain Chautems and his committee chose two people to receive the Elvin McDonald Research Endowment Fund awards this year. Congratulations to Katharine Arango Gomez who will evaluate hybridizations in the genus *Kobleria* and to Prasanna Naibi Shrungeshwara for his research on *Didymocarpus*. Their

findings will be published in future issues of *Gesneriads*. These awards recognize the research that is so important to further our understanding of our beloved family of plants.

My plants continue to enjoy all of the extra attention that they are receiving since I am staying home. New gesneriad hybrids are fun to grow and bloom for the first time. I also think that it is so important to preserve the old gesneriad hybrids that have survived the test of time such as *Achimenes* ‘Rumpelstilzchen’, which recently bloomed for me for the first time. It is an old Michelssen hybrid (1981) with dark foliage and a cerise pink flower with dark maroon streaks in the throat. About five or six rhizomes were planted in a five-inch pan pot that is wicked on a capillary mat. I have several pan pots of rhizomatous gesneriads like this, each with a variety new to me, growing on my light stands. They do not take up much room on my lightstands and provide an almost constant source of delight.

I encourage you to use this time without shows and other social gatherings to experiment with new plants and with new ways of growing them.

Everyone stay safe and well until we can meet again!

A handwritten signature in cursive script that reads "Mel".

Mel Grice,
<melsgrice@gmail.com>
Englewood, OH, USA



From the Editor



IN A NORMAL YEAR, THIS WOULD BE OUR POST-convention issue, filled with photos of plants from the convention flower show, and the people who gathered to appreciate and learn about gesneriads. But this is not a normal year. Due to the pandemic, there was no convention. However, in its place our Society held a virtual show, which was very successful. You will find some of the People's Choice winners in these pages.

In the past we've also featured many articles by folks who have traveled to places where gesneriads are native and/or cultivated. You'll find some such articles in this issue, and we have a few more in the pipeline. But that's all we'll have until people are able to travel again.

This means we'll need YOUR help in providing material for this journal. I know folks are gardening a lot more during the pandemic. Many of us are working from home now, or may have been laid off. Sales of houseplants and garden supplies are off the charts. Without travel, my plants are the happiest they've been in years – and they are helping me cope through a stressful time. How are gesneriads fitting into your life during these times? What are you enjoying right now about your gesneriad hobby? Put it in

I'd love to share your experiences with other gesneriad growers

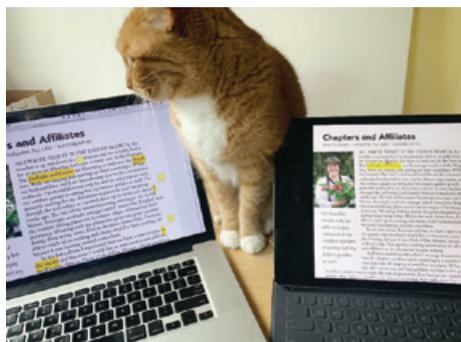
writing, take some photos, and email it to me. I'd love to share your experiences with other gesneriad growers.

One more thing. I would like to introduce my assistant, George. He helps me put together each issue of *Gesneriads* but until now he has never received credit. George has given permission for me to share these photos showing him hard at work on the journal.

Enjoy *Gesneriads*!

Peter

<gesnerieditor@gmail.com>
Seattle, WA, USA



I don't see any typos.



Good job Peter. Do I get my treat now?

New Publication Dates

Gesneriads is published quarterly, on the first of February, May, August, and November. Author deadlines are three months prior to publication, i.e., November 1, February 1, May 1, and August 1.

The Gesneriad Society's First Virtual Flower Show

Paul Susi < gesneriadawards@gmail.com >



The show went live on July 25 with 345 entries

DUE TO THE COVID-19 PANDEMIC, THE cancellation of the 2020 Convention planned for St. Petersburg, Florida, left a void in the lives of many members of The Gesneriad Society, especially those who enjoy entering their plants in the flower show. All members of the Society are also able to view images of the plants shown at convention on the Society's website shortly after convention is over. Would we be able to have a non-judged virtual flower show in place of the convention show? Would it be difficult to pull together? Would members send photos of their plants? As it turned out, we were able to pull it together, we learned a lot along the way, and yes, members sent lots of photos!

The first step in the process was putting a team together and assigning responsibilities. Mel Grice asked me to coordinate the show and a team of eight was assembled in early June, with an attempt to parallel the entry process at a convention show.

Mel Grice, Karyn Cichocki, Hung Nguyen and Paulo Castello da Costa handled classification; Alcie Maxwell prepared the images for the website; Julie Mavity-Hudson, our webmaster extraordinaire, posted all the images; and Jeanne Katzenstein and Dale Martens were our proofreaders. All images that we received were also provided to Peter Shalit, Editor of *Gesneriads*, for use in our journal. Then the team had to develop rules for the show (based on a convention show), prepare a very modified show schedule, and figure out how the photos would flow from classification to photo prep to the webmaster, without misplacing any of the hundreds of photos we received. The membership was notified of the show on June 11, with a July 1 deadline for entries. The show went live on July 25 with 345 entries from 92 exhibitors in six countries besides the United States (Canada, China, Greece, Norway, Philippines, and Portugal).

At some point in the process of receiving entries, the team decided to have a People's Choice Award, which would be based on votes from the public. The number of votes cast was lower than expected (perhaps because the voters could only select one exhibit out of 345) but seven entries easily went to the top of the list. In class order they are:

Class 2 – *Sinningia speciosa* unnamed Charles Lawn Hybrid exhibited by Eileen McGrath, Ontario, Canada

Class 3 – *Seemannia nematanthodes* exhibited by Panagiotis Mperetzakis, Thessaloniki, Greece

Class 6 – *Columnnea* 'Broget Stavanger' exhibited by Jiaqi Qin, Shanghai, China

Class 6 – *Episcia* hybrid exhibited by McArthur Cababan, Bukidnon, Philippines

Class 7 – *Primulina lutea* exhibited by Zhang-Jie Huang, Guilin, China

Class 9 – *Streptocarpus* 'Dale's Baby Bluebirds' exhibited by Dale Martens, Illinois, USA

Class 12 – *Primulina sinovietnamica* exhibited by Hong Xin, Anhui, China

The team is very happy that so many members took the time to submit photos of their beautiful plants. We look forward to future Virtual Flower Shows where all members will be able to display their well-grown gesneriads. The following pages show the prize winners, with a photo and brief essay by each grower.

***Streptocarpus* 'Dale's Baby Bluebirds'**

Dale Martens <dalemartens@mchsi.com>



I'm honored that my entry of *Streptocarpus* 'Dale's Baby Bluebirds' was one of The Gesneriad Society's 2020 Virtual Flower Show People's Choice selections. I've been hybridizing for about a decade to reduce the leaf length of streptocarpus by using the smaller species as parents. The species ancestry of my hybrid includes *S. lilliputana* and a small annual hybrid called *S. 'Cape Beauty'*. The latter was created in 1972 by Lyndon Lyon by crossing *S. cyanandrus* and *S. erubescens*. Lyndon worked with 'Cape Beauty' until it came true from seed. *Streptocarpus* 'Cape Beauty' self-pollinates, sets seeds and dies, all in about

a year. The reason I used a perennial hybrid, *S. 'Heartland's Snowflakes'* as the mother is because I hoped seedlings would inherit the rosette/starfish shape and the ability to live beyond one season. I was successful.

The photo shows the hybrid in a 2.5-inch pot. It is one single plant with nine leaves. I took a photo of it after I removed all the flowers to prove that it's one plant. Then I began propagating a few of the leaves for future distribution. *Streptocarpus* 'Dale's Baby Bluebirds' has species ancestors that prefer higher humidity, but my hybrid is perfectly fine growing out in the open on a wick-water reservoir, so it gets constant moisture and feeding. It will not tolerate the soil drying out, so in the future if you grow this hybrid or its siblings (*S. 'Dale's Cute as a Button'*, *S. 'Dale's Flock of Sparrows'*, and *S. 'Dale's Wee Wasp'*), please consider wick watering, or never let the root ball dry out. I grow these under LED lights, 12 hours a day, and use a variety of non-urea, higher nitrogen fertilizers at the rate of 1/8 teaspoon per gallon of water.

Primulina sinovietnamica

Hong Xin <hongxin200710084@126.com>



Five years ago, while on a field trip with Wen Fang and his research team to the Nonggang National Reserve near the China-Vietnam border, we found *Primulina sinovietnamica* after more than three hours of hiking in the hot summer sun. It was growing on the surface of a karst rock formation in a northern tropical limestone seasonal rainforest.

The plant in the Virtual Show is about a year old. The photo was taken by Dechang Meng, who used to be one of my students. The plant started as a leaf cutting from the mother plant at

the Gesneriad Conservation Center of China (GCCC) in Guilin. I have been growing it at Anhui University, where I have been teaching. Unfortunately due to Covid-19, our university was shut down. I then shipped the plant to the GCCC in Guilin.

I grow it in a mix of akadama, perlite, and limestone rock fragments in a terra-cotta pot. The mix must be well-drained but retain sufficient moisture. The mother plant grows very well on a limestone rock at the GCCC. During the summertime in Guangxi, it grows under shade cloth to protect it from the sun. It can also grow very well in average home conditions, but it will need to be placed on a windowsill with bright light, like a south-facing window in the winter or on a light cart. It prefers temperatures from 59°F (15°C) to no more than 86°F (30°C). Within this temperature range, it will grow all year long. It does not require lots of water or fertilizer.

The flowers are purple, but I grow it for the red hairs on the leaves. It's a choice plant, a treasure, very eye-catching, and will remain one of my favorites. Dechang Meng also helped me to care for the plant, and his photograph really shows off its striking characteristics.

***Columnnea* 'Broget Stavanger'**

Jiaqi Qin <Shbg-kjt@qq.com>



Several years ago I saw photos of columnneas on The Gesneriad Society's website and I was immediately attracted to them. The shape of the flower is so beautiful. They reminded me of a whale in the sea.

One day in 2017, I found a nursery in Shanghai, China, selling *Columnnea* 'Broget Stavanger'. I felt so fortunate to see this plant available for sale, and I bought it immediately. Maybe I was too excited, or too much in a hurry, but I brought it home, even before I knew how to grow it.

The first year was depressing. The columnnea's leaves kept dropping off, especially during the summer. I really thought the plant I loved was going to die. And the worst part was, I didn't know why this was happening. Finally, I did

some research on *Columnnea* and learned that the plants in this genus grow as epiphytes on trees in Central and South America. I also learned that they are shallow-rooted plants and need a warm environment with shade and high humidity.

After reading this, I changed everything. I now grow it in a smaller plastic pot, use small stones to increase soil permeability and drainage and keep it in a semi-shade environment. I soon found that the leaves looked much better because of the higher humidity and less light. The next year, my columnnea became more and more luxuriant. The branches more than doubled from the previous year. I was so excited to see it flower and then stay in bloom for a very long time. It flowered from late March to early May.

Columnnea 'Broget Stavanger', once a challenging plant for me to grow, has become my favorite plant. It is hard to explain how much I like it!

Episcia Hybrid

McArthur Cababan <mcarthurcababan15@gmail.com>



Episcia is the embodiment of vibrant, gorgeous, and elegant colors, with endless patterns like a living tapestry. For me, episcias brought the rainbow down to earth.

I am new to gesneriads, and I'm really fascinated by their look. I started my episcia collection when I met Stephen Maciejewski. He identified some plants for me online and I have been hooked ever since. Knowing their names makes it more interesting. I soon discovered that they are common in the Philippines and easy to cultivate.

I have been collecting and growing gesneriads for more than a year now. Any time I'm in the field for work, research, or just to travel, I look for them. I started a mini collection in my garden, and soon the plants were thriving and even starting to bloom. I used loamy soil from our farm, which they seem to love. They also love the heat and humidity of the Philippines. I grow them in any sort of container I can find.

My outdoor episcias do best when the surface of the soil is allowed to dry just slightly between watering, but I never permit them to dry out completely. Plants should also never be exposed to direct sunlight, but they do need bright light to flower well. I situate my episcia collections in a shady area near my mini garden. Flowers usually last for a week, and some insects are attracted to them.

An episcia's ability to root and grow near the surface of the soil fascinates me. I soon acquired many plants. My interest turned into a passion. With its unusual growth habit and endless coloration patterns, *Episcia* has brought joy to my life.

***Sinningia speciosa* unnamed Charles Lawn hybrid (Back cover photo)**

Eileen McGrath <eileenhmcgrath@outlook.com>

I was given a tuber of an unnamed Charles Lawn *Sinningia speciosa* hybrid by Dale Martens a few years ago. Dale told me her friend Charles Lawn from Australia sent her the seeds. She planted the seeds and was so kind to share one of the resulting small tubers with me.

I have been growing the tuber for a few years and now it has grown to three inches in diameter. I grew the plant in a five-inch pot in my solarium under natural light. It is subjected to high and low temperatures year round. Usually it has a dormant period, January to the end of February, during which time I water very little, maybe once a month. When I saw the tuber starting to grow this year, I repotted it in ProMix®. When new growth became visible, I started feeding it 20-20-20. It was grown in an east window getting sun part of the day, still on 20-20-20. When the flower buds started to appear, I moved it around so it didn't get sun all day long. When the flowers started to open I moved it around, giving it high light but no sun. During the growing period I turned the plant often to encourage even growth, but in natural light this is sometimes hard to do.

The flowers are all finished now but the plant has started to put out new growth again. This year, I will use a knife to remove newly formed suckers, which will be used to start new plants.

Seemannia nematanthodes (Front cover photo)

Panagiotis Mperetzakis

I grew *Seemannia nematanthodes* for the first time in 2019. At first, I was skeptical because I thought the genus was challenging to grow. I quickly realized that this was not the case. I planted two rhizomes in a mixture of peat and perlite in a plastic pot. I grew it outdoors on a north-facing, second-floor balcony, where it received direct sunlight for about three hours in the morning. The plant's growth was firm and compact.

Summers in Greece are hot and dry, between 90°-100°F (32°-38°C), with 28% to 38% humidity during the day. During the summer this plant grew rapidly and required daily watering. I also used two supports from the beginning because I wanted the plant to stand upright. In July it began to bloom profusely, and the flowering lasted about three months. The flowers last a long time. Each individual flower lived for about twenty days. Each new flower added to the previous ones, creating a fiery red effect. I loved this plant very much for all of the above: the fiery color, the long life of the flowers, and its sturdy growth habit. In the winter a big surprise awaited me, when I realized that another 34 rhizomes had come from the two rhizomes I planted. What else could you want from a plant?

Primulina lutea

Zhang-Jie Huang <lydy1993@126.com>



Primulina lutea is one of my favorite gesneriads. In its native habitat in Guangxi province, China, it lives on rock surfaces on the bright side of karst landforms. Its corolla is lemon yellow, while the bracts are greenish-white to white. It flowers during the summer. Gazing at the beautiful flowers during the summer heat is as refreshing to the body and soul as drinking a glass of cold lemonade.

It's a beauty, but not picky. *Primulina lutea* is easy to propagate by leaf-cuttings and only takes about a year from seedling to bloom. This cutie developed from a leaf cutting in a peat-perlite mix

(1:1 or 3:2), in a terra-cotta pot. Using peat-free compost to replace the peat is okay. I have grown it in a greenhouse at the Gesneriad Conservation Center of China (GCCC) in Guilin. All you need to do to keep it in good shape with attractive leaves, is to place it under a shelter that prevents the rain from touching the leaves and give it enough bright light. Though it is drought tolerant, it is essential to water it three to four times a week in summer. Shade cloth is needed to prevent it from scorching in the summer sun. Frequent repotting is unnecessary, but you should check the base of the stem to see if it is swollen. If it is, then it may be infected by a nematode. If this is too severe, you can take leaf cuttings and compost the parent plant. Primulinas do not need much feeding so lightly applying fertilizer on the leaves once a month is enough.

According to the International Union for the Conservation of Nature (IUCN), this species is not under threat in the wild, but it's still better to obtain this beauty from others, by leaf cuttings or by sowing seeds.

Growing the blue flowers of *Rhynchoglossum*

Chas Huston ~ College of Biological Sciences, University of Minnesota ~ <chas55102@gmail.com>



All photos by the author

THE FLOWERS OF *RHYNCHOGLOSSUM NOTONIANUM* ARE A TRUE blue, at the end of long spikes on very fleshy stems that rise from roots growing in the wettest soils. The leaves are a cheerful bright green, and the heavy stems climb from very wet soil to lean all over their neighbors in the hot, humid tropical room of the greenhouse, reaching for the sun. It quickly grew from seed to over a foot tall and then bloomed continuously. The leaves are unique, a graceful spiral, which allows the seedlings sprouting here and there to be identified at a glance. There are excellent photos on the Gesneriad Reference Web of plants at The Royal Botanic Garden, Edinburgh, at Palm Hammock Nursery in Florida, and at the 2010 Convention grown by Bill Price.

If it dries, it dies.

Bright filtered sunlight through the whitewashed glass roof was scattered by the leaves of trees and taller plants. Our collection has more than 1,600 species. Within the different climate rooms, the mix of plants creates many microclimates. The rhynchoglossum found a perfect niche, shaded by a rambling nepenthes with very large leaves and predatory pitchers. Fans provided some air movement, evaporative coolers added humidity and more air circulation. Temperatures soared into the high 90°sF on sunny summer days. Lows in the winter were in the mid-60°sF most of the time. Everything was damp. This is one of the most challenging gesneriads we have grown in the botanical collection.



The key to growing species is understanding how they grow in nature. Research articles from scientists in India were invaluable. *Rhynchoglossum notonianum* is found in the northern Western Ghat mountains of India. It is observed as an annual growing by waterfalls in Kerala, India. It is found on seasonally moist cliffs and vertical rock faces. The botanical term for plants growing on cliffs is chasmophytes [chasm + phyte]. I discovered this word in these articles on cliff plants, and it's irresistible! After all, we're a teaching

collection. There is a monsoon season from June to October, and then for almost eight months it is very dry. The roots grow into crevices where water trickles down from the top of the cliffs, and spray from the waterfalls keeps them moist. It thrives in bright filtered sunlight. This species also grows on Sri Lanka, sometimes reported from wet forests as well as by waterfalls.

Another species, *Rhynchoglossum azureum*, is found in Central and South America. *Rhynchoglossum* is the only genus of gesneriads with species in both the New and Old Worlds. It is intriguing to imagine how it could have gotten across the Pacific. There are observations that it grows near very old native settlements.

Received in 2015, ours grew into a large plant in less than a year, and in the summer started flowering continuously. It was beneath other, taller plants, climbing over their stems. The glass roof was coated with whitewash. The ten-inch pot filled with coir and gritty materials in which the rhynchoglossum grew was watered every day, but the very succulent stems and delicate leaves wilted on hot days. So, it got a saucer under the pot, always filled with water. When it collapsed partway, watering brought it back completely in about an hour. When the stems collapse completely and turn brown or black, they turn to mush and die. Rot sets in quickly on cut or damaged stems. Treating a clean cut with powdered sulfur sometimes saved a plant.

Propagation is easy from seed, but transplanting is a challenge. The stems love to root at the leaf nodes, so sistering a stem into a new pot is the fastest method for producing new plants. In nature, they can root into any crevice or in a pool of water. Stem cuttings were not supposed to work, but about one in four was successful. They were treated with





sulfur, put into a mix of half and half perlite and vermiculite with a little New Zealand sphagnum moss and put under a dome. This was just off to the side of two white LED shoplights.

We send plants to labs and classes, and they are moved sometimes as we constantly prune and rearrange the collection. The hot tropics room was a dense jungle in the next summer of 2016. So, when I noticed the pot was gone, it wasn't a concern, except that the saucer was still there. Plants come back. And it could have been hidden somewhere. The other hot tropics room with the 47-year-old cacao tree was intentionally a jungle, and the overgrown in-ground plantings there could hide anything. We checked thoroughly for our missing treasure, and asked all the professors who borrow plants, but it was definitely missing. This was unfortunate, as the collection we got it from had lost theirs, and their source was a private collection. Its owner had passed away, and his family had demolished the greenhouse, plants and all.

Two months later, one of the student workers found several seedlings in a pot next

to our missing one, and I transplanted the four largest seedlings. We waited for the rest of the seedlings to grow, checking them often. When I went to transplant them a month later, the seedlings and the top inch of soil in that pot had been removed! The four seedlings I had transplanted lived, at least for a while. It was propagated every way possible, and tested in different soil mixes.



The two large plants we have now, which are in the photographs, are from seed. They are over a year old, and, unlike in their natural habitat, there is no drought here. But if they do not get enough water every day, they start to collapse. One is three feet across, sprawling under a variety of tropical trees. It came up as a volunteer, under the curry leaf tree, *Murraya koenigii*, native to India. We sometimes use the fresh leaves in curry sauces, as one of the professors from India at the university taught me. She comes by now and then to cut a few leaves.

My plan is to set up a stone wall with lots of crevices for chasmophytes, where we could grow primulinas, petrocosmeas, and African violet species as well. We would also put specimens from other plant families in the mix.

The collection has many uses in addition to teaching and research. It is used by art classes, photographers, culinary students, and the Twin Cities Gesneriad Society meets there.

Web resources

Vascular plant assemblage of cliffs in northern Western Ghats, India:

<https://indiabiodiversity.org/document/show/2394>

Lots of photos in nature :

<https://sites.google.com/site/efloraofindia/species/a---l/g/gesneriaceae/rhynchoglossum/rhynchoglossum-notonianum>

Changes to Species Seed List 3Q 2020

Additions:

- Aeschynanthus gracilis*
- *Gasteranthus anomalus* GRE12902
- *Gesneria depressa* GRE11970
- *Nematanthus albus* 'Serra Bonita'
- *Primulina weni*
- *Sinningia canastrensis* (purple)
- *Sinningia concinna* 'Seropedica'
- *Sinningia cooperi* 'Rio do Julia'
- *Sinningia speciosa* 'Pink Itaquera'

Deletions:

- Achimenes flava*
- Achimenes mexicana*
- Aeschynanthus albidus*
- Aeschynanthus micranthus* SEL 1974-0260

- Aeschynanthus pulcher* (*boschianus*)
- Aeschynanthus* sp. /Philippines
- Boea hemsleyana*
- Boea hygroskopica*
- Codonanthe cordifolia*
- Codonanthe devosiana* (pink)
- Codonanthe erubescens*
- Codonanthisopsis caribaea*
- Columnea byrsina*
- Columnea farwettii*
- Columnea linearis* 'Purple Robe'
- Columnea* sp. GRE9000 /Ecuador
- Epithema* sp. (blue) /N.Perak
- Haberlea rhodopensis*
- Kohleria grandiflora*

Mail orders for species seed to:

Carolyn Ripps, 21 Sprain Road, Hartsdale, NY 10530

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The Minnesota Kohleria Project

Conrad Leighton ~ White Bear Lake, MN, USA ~ <cattli@comcast.net>



IN MID-MARCH, CLAY ANDERSON, A FOUNDING member of Gesneriad Hybridizers Association as well as an esteemed long-time member of the local gesneriad clubs, brought an intriguing project to the Minnesota Gesneriad Society meeting.

Kohleria hybrids in general are hard to cross because of hybrids' lack of viable pollen, but Clay discovered a hybrid, *K.* 'Springsong', hybridized by Betty Cessna, with pollen. He succeeded in crossing it with *Kohleria* 'Ampallang' and *K.* 'Designer's Helloween', planted seeds of the crosses, and ended up with a host of seedlings from both crosses.

Clay brought in pots of the crosses, giving a sales pitch asking members to grow them out for him. Because of the complex genetics of the parents, he was hoping for a wide variety of flower colors, patterns, and leaf colors. He planned to share seedlings with our other local club, the Twin Cities Chapter of The Gesneriad Society, but thanks to COVID-19, their meetings were cancelled and Clay was stuck with that club's share of seedlings.

I have found kohlerias easy to grow if you give them what they want: bright light, frequent repotting into larger pots, and more fertilizer than many gesneriads need. They are vigorous growers and by August, my seedlings were good-sized plants with rhizomes and most were flowering.

I had never grown kohlerias from seedlings and found them quite obliging. I ended up with 26 mostly blooming plants without killing any of them, which is unusual for me.

I hope other clubs and members embrace opportunities... and then share their bounty with the rest of us



Group photo of blooming seedlings

All photos by the author



Seedling K-7



Clay explains the project to the chapter



Young seedlings

The club members humored each other, emailing pictures of our plants' flowers, a welcomed diversion from the isolation of lockdown. It was apparent from others' pictures and my plants that Clay's hopes were answered: there was great variety in blossom colors and shapes and leaf colors. Most seemed reasonably compact although they haven't reached full size yet.

When I reached twenty plants with flowers, I invited Clay over to my house



Seedlings ready for distribution



Seedling K17

to help me select the best. We pondered which I should keep at an outdoor table. Clay said the flowers and plants looked different and better in person – photos often don't do them justice. I found it heartbreaking to chuck the losers since I liked most of the plants' flowers. Being a veteran gardener, though, I accepted the necessity of murdering excess plants. Eight seedlings landed in my mulch pile with more to join them in the near future, I'm sure.

Clay looked over the flowers for pollen – after all, one of their parents had produced pollen – but found none.



Seedling K1

I expect, once I've grown the seedlings to maturity, I'll be able to share rhizomes of the best of them with the local clubs and expect fellow growers will do the same. We might still find a seedling that produces pollen.

For me, this project is a natural progression of my fascination with growing gesneriads from seeds, many received through the Society's Seed Fund. I find tending to tiny seedlings fulfills my need to nurture. This grow-out remains rewarding although it's a shame I couldn't share and compare my results with the other growers at meetings. I hope other clubs and members embrace opportunities like this, not just with kohlerias, and then share their bounty with the rest of us.



Clay with blooming seedlings



Enchanted Gardens ~~~ Heidi Dillenbeck

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The Gesneriad Reference Web – An Update

Ron Myhr ~ Ashburn, Ontario, Canada ~ <rmyhr@pathcom.com>



IT HAS NOW BEEN THREE YEARS SINCE THE Gesneriad Reference Web (GRW) went “live” as a service of the Gesneriad Society, and a busy three years it’s been! We’ve been working hard to meet the mission we established and have grown and improved the GRW practically every month. The new features and the new content have kept the core GRW team busy, and it has been gratifying to receive lots of positive feedback from amateur growers and professionals alike.

There are on the order of ten thousand images and

other media items on the GRW. In order to meet our goals of providing both comprehensive and accessible information, we had initially organized the material into two main categories – plant images and descriptions within individual genera, and a vast array of botanical prints in the antique prints section. We’ve gone on to add a series of comprehensive articles prepared for the GRW and a library of botanical journal publications. Here’s a brief summary of each of these sections:

- The **Genera** pages include brief descriptions of each of the Gesneriaceae genera featured on the site (all of the ones commonly seen and many others), and each of these genus descriptions includes links to subsections for species and (if they exist for the particular genus) for hybrids and intergeneric hybrids. These subsections contain links to individual plant pages, most with high-resolution (zoomable) images of the species or hybrids, notes on the subject plant, and many with links to a slideshow showing alternative photos of the subject.
- The **Articles** include comprehensive pieces on specific subjects written by experts for the GRW, and we anticipate that many more will be posted in due course.
- The **Antique Prints** pages include hundreds of high-resolution scans of botanical prints from the 19th century or earlier, most more than 150 years old. Many are individually hand coloured and most are very beautiful. Large images can be downloaded for printing on paper or fabric.
- The **Library** is a compendium of almost 1000 professional botanical articles, most from 1995 to the present with some older (important) articles also included. Most of these have both an abstract (the article summary published with the full article text) and a PDF of the full article itself. For more recent articles covered by copyright, we have the abstract plus a link to the publication website where the full article may be available.

A recent improvement to the site has been the addition of a highly functional “Advanced Search” feature, which allows a user to drill down to find specific items. For instance, we have “tagged” all the images of plants shown at Gesneriad Society convention shows with tags in the form of “GS2019”. If you want to see all the pictures of the plants from, say, the 2015 Convention, use Advanced Search to search on the tag “GS2015”. Voila, a listing of 23 award winners from that convention!

Mission of the Gesneriad Reference Web: Provide comprehensive, up-to-date and accessible information on the entire gesneriad family, documenting its beauty, botany and complexity for a broad audience.

Family Photos in the Gesneriad Reference Web



Sanango



Sarmienta



Seemannia



Sinningia



Smithiantha



Solenophora



Sphaerorrhiza



Streptocarpus section *Saintpaulia*



Streptocarpus subgenus
Streptocarpella



Streptocarpus subgenus
Streptocarpus



Titanotribulum



Trichodyrmonia

The GRW is managed by a core team of administrators, currently comprised of Ron Myhr, Arleen Dewell, Alcie Maxwell, and Hung Nguyen. There is also an extensive roster of individuals responsible for editing specific genera, and of professionals and other knowledgeable individuals who provide advice through their role as consultants.

It has been particularly gratifying over the last year to receive commentary and congratulations from a range of individuals about the site. Here's a sampling:

Dr. Dirk Bellstedt is a recently retired polymath from Stellenbosch University in South Africa; he's an expert on *Streptocarpus*, floral ecology in South Africa and ostriches! He wrote "*I have looked at the GRW quite extensively, and I think that you deserve a medal for putting together such a monumental resource! It is now an extremely valuable resource and very helpful for scholars and the general public. I did manage to surf through the various subsections quite easily. If a website becomes as large as yours is, then it is always more problematic to house all of the material, but I think your website does so very well.*"

Dr. John L. Clark, one of the most prolific scholars on the New World Gesneriaceae, a frequent contributor to *Gesneriads* and a GRW consultant, wrote: "*The GRW is a collaborative-based resource for taxonomists and horticulturists. It lays the groundwork for a broad audience eager to learn more about the flowering plant family Gesneriaceae. It's an honor to contribute to this vital resource for current and future generations of botanists.*"



This botanical illustration of *Sinningia speciosa* is an example of what can be found on the GRW.

One of our genus editors, Beverly Williams, wrote: *“I was astonished to be asked to be an editor of the Petrocosmea page. Being able to provide information about this unusual genus and its hybrids, which fascinates the public and amateur growers, is exhilarating. I often hear from the public, “What is that?”. Being able to suggest where they can get more information is great.”*

Karyn Cichocki, an expert grower, Gesneriad Society stalwart and frequent contributor to gesneriad and African violet publications said: *“I access the GRW to get accurate spelling, compare pictures and for the interesting articles. If I’m growing a plant for the first time I will check to see if the GRW has any cultural information about it. The GRW is a great one-stop source for gesneriad growers and plant enthusiasts.”*

Access the GRW at <https://gesneriads.info/> and have fun!

Seeds For Us

Send orders for hybrid seed to: Gussie Farrice, 121 Nelson Avenue, Staten Island, NY 10308

Send orders for species seed to: Carolyn Ripps, 21 Sprain Road, Hartsdale, NY 10530

Send donations of seed for the Seed Fund to: Karyn Cichocki,
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Gesneriads in Australia – a Travel Notebook

Wallace Wells ~ New York, NY, USA ~ <wwglox@gmail.com>



Australia is a wonderful place to visit for nature lovers

AUSTRALIA CAME TO ME AS SUCH A PLEASANT divergence from the ordinary and expected. During my recent trip to the continent “Down Under,” I encountered many new plants and animals unknown to me. In many cases they were indigenous and not found anywhere else.

Australia is a very progressive country. The larger cities, and even the smaller ones, have botanic gardens that are frequently very grandiose in their size and adornment. The Aussies are dedicated to open spaces and “greenways” to a level that Americans unfortunately are not.

Sydney and the Royal Botanic Garden, Sydney

The Royal Botanic Garden, Sydney is a 30-hectare /74-acre park at the waterfront in the city. The gardens abound with Australian species and foreign plants as well. It has splendid garden design with curving pathways and focal points of visual interest.

A large number of trees of the ancient genus *Araucaria* were present and gave a good perspective of the morphology of the species. The “gum” trees *Corymbia* were in flower with spectacular pink flowers. The grevillas with their lacy foliage and brightly colored flowers were in peak flower in early March, which was late summer there.

A wonderful fernery with a high arched roof supported by columns was planted with tree ferns and other shade-loving plants including *Begonia thiemie* and *Achimenes* hybrids. The garden had a plant sale put on by volunteers 11 a.m. to 2 p.m. most days. The selection was very exquisite.



The gleaming Sydney Opera House in the bay.

All photos by the author



A large colony of *Kohleria eriantha* at the Royal Botanical Garden, Sydney



Kohleria eriantha (Hort)

At one of the northern garden entrances I found a large population of *Kobleria eriantha* (Hort), which may be a hybrid inclusive of *K. hirsuta* genes, growing in dense shade under a tree. The plants seemed to be very old by the thickness of their stems.



Elizabeth Glazebook had on her porch this nice specimen of *Sinningia eumorpha* × *S. bullata*. This hybrid is similar to *Sinningia* ‘Romanza’ but has different cultivars as parents.



Some of Elizabeth’s beautiful blooming gesneriads



Petrocosmea (unknown lineage)



Titanotrichum oldhamii (left) and *Aeschynanthus humilis* hybrid (right)



Double Achimenes 'Yellow Fever'



Achimenes dulcis, a species



Aeschynanthus hybrid



Rhizomatous hybrid involving *Eucodonia*; exact parentage unknown

Blue Mountains – Home of *Fieldia australis*

Australia has five native species of Gesneriaceae. Four are clustered in Queensland; the fifth, *Fieldia australis*, is located in the Blue Mountains, only 30 miles west of Sydney. I took a day trip in a minivan to see “The Grand Canyon” of Australia. The area began as a coral reef at the bottom of the ocean 300,000,000 years ago. It was uplifted hundreds of feet, then weathered down. There are miles of high cliff with water dripping down the edges.

The area is referred to as a “rainforest without the rain,” since the source of the water is deep within the rocks. The evaporation of the water creates a bluish haze, the source of the name. Unfortunately, I did not see *Fieldia* but the beautiful vistas, weird rock formations, and lush subtropical vegetation sufficed.

Hunter Valley African Violet Society Inc., Gesneriad Study Group (8 March 2020)

I had the pleasure in 1999 of meeting Elizabeth Glazebrook on a Gesneriad Research Foundation Study Trip to Brazil. She is an avid gesneriad grower and we became e-pen pals ever since. I was very glad to have the opportunity to visit her at home in Lambton, a suburb of Newcastle. Lambton is frost-free, what we would call USDA zone 10 here in the USA, so she can leave her plants out all year long. She had on her porch a nice specimen of *Sinningia eumorpha* × *S. bullata* made by Ruth Coulson. This hybrid is similar to *Sinningia* ‘Romanza’ but has different cultivars as parents.

We then went to The Hunter Valley African Violet Society, Inc., Gesneriad Interest Group meeting at Kath Palmowski’s home. She had a “Florida Room” with windows all around and a pool table in the middle that was used for their “Little Show.” Outside was her “greenhouse,” a shade house draped in green mesh. The warm, frost-free weather eliminated the need for any stronger barrier.

Lastly, we went to the Hunter Region Botanic Gardens. It contained a high number of native Australian plants as well as orchids, begonias, and other ornamental plants. The park was especially rich in grevillas, which are either small trees or shrubs with interesting “toothbrush” flowers.

Australia is a wonderful place to visit for nature lovers and it is even more splendid because of the friendliness and hospitality of the people who live there.



Elizabeth Glazebrook has been a leading supporter of the gesneriad community in the Newcastle, NSW area for over 30 years.



Author:
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Fairylake Botanical
Garden, Shenzhen &
Chinese Academy of
Sciences

Plants of *Petrocosmea* in China

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The price of Qiu's book is \$50 which includes free shipping within the continental US.
For foreign shipments please contact Stephen at Teciu1949@gmail.com for shipping cost.

Gesneriad Registrations

Irina Nicholson, Registrar ~ Lakewood, CO, USA ~
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Primulina 'Graceful Dance', 2020, IR201517, (*P. sclerophylla* × *P. minutimaculata*), Haixia Yan, Qian Song, Shikai Guan, and Shuming Luo of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made Apr. 25, 2018, seeds planted May 30, 2018, first flowering May 1, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves dark green with light veins, 8.1-9.0 cm long × 6.2-7.5 cm wide, ovate, with cuneate base, acute tip, and serrate margin, hairy, petiole 1.0-1.9 cm long. Calyx split, light brown, 0.9-1.3 cm long. Pedicel 1.6-2.1 cm long, 8-9 flowers per axil. Corolla salverform, 4.9-5.5 cm long × 1.1-1.2 cm wide, purplish. This variety tolerant of dryness, high temperatures, shady conditions, and direct strong sunlight; requires a loose soil.



Primulina 'Carpet of Flowers', 2020, IR201518, (*P. glandacestriata* × *P. yungfuensis*), Haixia Yan, Jinye Zhou, Dayan Tao, and Qian Song of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made May 2, 2017, seeds planted Jun. 27, 2017, first flowering May 3, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves dark green with white veins, 9.2-10.2 cm long × 6.7-7.3 cm wide, elliptic, with cuneate base, acute tip, crenate margin, hairy, petiole 2.1-5.5 cm long. Calyx split, light brown, 0.4-0.7 cm long. Pedicel 1.0-1.8 cm long, 3-9 flowers per axil. Corolla salverform, 5.5-6.0 cm long × 1.4-2.0 cm wide, purplish. Good ventilation and bright, scattered sunlight needed.



Primulina 'Late Spring', 2020, IR201519, (*P. yungfuensis* × *P. laxiflora*), Haixia Yan, Shikai Guan, Dayan Tao, and Jinye Zhou of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made May 16, 2018, seeds planted Jun. 21, 2018, first flowering Apr. 20, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves green with light veins, 8.7-10.0 cm long × 6.7-7.6 cm wide, ovate, with cuneate base, acute tip, and crenate margin, hairy, petiole 2.5-3.6 cm long. Calyx split, brown, 1.0-1.2 cm long. Pedicel 3.3-4.8 cm long, 9-10 flowers per axil. Corolla salverform, 5.0-5.4 cm long × 1.9-2.1 cm wide, purplish. The flowering period is from April to May. The variety requires indirect light and good ventilation conditions; medium should be loose and ventilated.



Primulina 'River Dragon', 2020, IR201520, (*P. liujiangensis* × *P. longyi*), Shikai Guan, Haixia Yan, Jinye Zhou, and Qian Song of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made Nov. 4, 2018, seeds planted May 21, 2019, first flowering May 1, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves dark green, 7.9-9.5 cm long × 4.9-6.8 cm wide, elliptic, with cuneate base, acute

tip, and serrate margin, hairy, petiole 2.3-3.3 cm long. Calyx split, green with brown, 0.7-0.8 cm long. Pedicel 0.6-0.9 cm long, 7-18 flowers per axil. Corolla salverform, 4.9-5.2 cm long × 1.6-1.9 cm wide, purple. Will grow well in environments with scattered light, 20-27°C temperature range, and relative air humidity above 60 percent.



Primulina 'Return With Honor', 2020, IR201521, (*P. yungfuensis* × *P. liujiangensis*), Dayan Tao, Haixia Yan, Shikai Guan, and Qian Song of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made Apr. 26, 2017, seeds planted Jun. 26, 2017, first flowering May 1, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves dark green, 6.0-7.6 cm long × 4.3-5.1 cm wide, elliptic, with cuneate base, acute tip, and serrate margin, hairy, petiole 1.1-2.9 cm long. Calyx split, blackish green 0.5-0.8 cm. Pedicel 1.0-1.7 cm long, 4-9 flowers per axil.

Corolla salverform, 4.5-4.9 cm long × 1.6-1.8 cm wide, light purple. Soil matrix should be loose and breathable; scattered light preferred.



Primulina 'Chang-Ngo', 2020, IR201522, (*P. glandaceistriata* seedling selection), Li Shu, Wen Fang, and Huang Zhang-jie, of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Mar. 2018, seeds planted Jul. 3, 2018, first flowering Mar. 23, 2019. Fertile, true from seeds. Basal rosette, stem 1 cm long. Leaves green with white veins, 8-10 cm long × 5-7 cm wide, ovate, with cuneate base, acute tip, and entire margin, hairy, petiole 2

cm long. Calyx split, green, 1.0 cm long. Pedicel 0.8-1.0 cm long, 5-10 flowers per axil. Corolla salverform, 2-3 cm long × 2-3 cm wide, white with yellow and purple spots in tube. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Pink Silk Skirt', 2020, IR201523, (*P. beiliuensis* var. *fimbribracteata* × *P. fimbrisepala* var. *fimbrisepala*), Wen Fang, Huang Zhang-jie, and Xin Zi-bing of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Mar. 23, 2015, seeds planted Mar. 7, 2016, first flowering Apr. 10, 2017. Sterile, reproducible only vegetatively. Basal rosette. Leaves green 10-18 cm long × 8-17 cm wide, ovate, with cordate base, acute tip, and undulate margin, hairy, petiole 3-5 cm long. Calyx split, yellow

with red hairs, 0.3-0.6 cm long. Pedicel 1.5-2.0 cm long, 7-9 flowers per axil. Corolla salverform, 4-5 cm long × 2 cm wide, pink with purple lines and two light yellow stripes in tube, red pistil with white stigma. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Purple Fumes', 2020, IR201524, (*P. purpurea* × *P. longyi*), Wen Fang, Huang Zhang-jie, and Li Shu of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Apr. 15, 2018, seeds planted Mar. 17, 2019, first flowering Mar. 16, 2020. Sterile, reproducible only vegetatively. Basal rosette, stem 1 cm long. Leaves green, 10-12 cm long × 4-5 cm wide, elliptic, with cuneate base, acuminate tip, and entire margin, hairy, petiole 3-7 cm long.

Calyx split, green, 0.2 cm long. Pedicel 0.8-1.0 cm long, 15-18 flowers per axil. Corolla salverform, 2 cm long × 1.5 cm wide, purple with white tube and two light yellow nectar guides inside tube. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Queen of the Night', 2020, IR201525, (*P. eburnea* × *P. ronganensis*), Li Shu, Wen Fang, and Fu Long-fei of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Apr. 2, 2018, seeds planted Mar. 17, 2019, first flowering Mar. 20, 2020.

Reproducible only vegetatively. Basal rosette, stem 1-2 cm long. Leaves green, 13-20 cm long × 7-10 cm wide, ovate, with oblique base, acute tip, and entire margin, hairy, petiole 3-5 cm long. Calyx split, pink, 0.6-0.8 cm long. Pedicel 1-2 cm long, 15-17 flowers per axil. Corolla salverform, 3 cm long × 2-2.5 cm wide, purple with yellow spot in tube. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Rouge Spots', 2020, IR201526, (*P. petrocosmeoides* × *P. leprosa*), Wei Yi-gang, Wen Fang, and Huang Zhang-jie of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Sep. 15, 2017, seeds planted Mar. 17, 2018, first flowering Mar. 19, 2019. Sterile, reproducible only vegetatively. Basal rosette, stem 1–2 cm long. Leaves green, 13–20 cm long × 7–10 cm wide, ovate, with cuneate base, acute tip, and entire margin, bullate, hairy, petiole 3–5 cm long. Calyx split, green, 0.2–0.3 cm long. Pedicel 1 cm long, 5–8 flowers per axil. Corolla salverform, 3 cm long × 1.3–1.5 cm wide, pink and yellow with purple spots in tube, purple lines from yellow abaxial and adaxial lips to inside of tube. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Sorbetto', 2020, IR201527, (*P. medica* seedling selection), Wu Jui-Jung, Wen Fang, and Li Shu of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Pollination made Apr. 15, 2015, seeds planted Mar. 17, 2016, first flowering Apr. 7, 2017. Reproducible only vegetatively. Basal rosette, stem 1–2 cm long. Leaves green, 13–20 cm long × 7–10 cm wide, elliptic, with cuneate base, acute tip, and entire margin, hairy, petiole 3–5 cm long. Calyx

split, green, 0.2–0.3 cm long. Pedicel 0.7 cm long, 9–15 flowers per axil. Corolla salverform, 2 cm long × 0.8–1.2 cm wide, white with yellow spot in tube, pink spot on base of abaxial lips inside. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Spring Tour', 2020, IR201528, (*P. fimbrispala* var. *fimbrispala* × *P. orthandra*), Wei Yi-gang, Wen Fang, and Li Shu of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Apr. 7, 2018, seeds planted Apr. 17, 2019, first flowering Apr. 5, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves green, 13–20 cm long × 8–10 cm wide, ovate, with cuneate base, acute tip, and crenate margin, hairy, petiole 2–3 cm long. Calyx split, green, 0.3–0.4 cm long. Pedicel 1 cm long, 10–15 flowers per

axil. Corolla salverform, 2 cm long × 1 cm wide, purple with 2 light yellow stripes in tube, white from base of adaxial lip to inside of tube. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Star Sand', 2020, IR201529, (*P. subrhomboidea* × *P. subrhomboidea*), Wen Fang, Huang Zhang-jie, and Li Shu of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Apr. 15, 2017, seeds planted Mar. 17, 2018, first flowering Mar. 26, 2019. Fertile, true from seeds. Basal rosette, stem 1 cm long. Leaves grayish green, 25 cm long × 18 cm wide, elliptic with cuneate base, acute tip, and entire margin, smooth, petiole 2-3 cm long. Calyx split, brown, 0.4 cm long. Pedicel 0.8-1 cm long, 7-9 flowers per axil. Corolla salverform, 4 cm long × 3-4 cm wide, purple. This cultivar is the choice selection from wild stock. Large grayish green leaves, nearly diamond in shape, full of silvery particles on abaxial surfaces of leaves, looking like bright sands/stars in the dark night sky. Purple

flowers, white tube, two yellow nectar guides and purple spots in tube, long inflorescence with red hairs. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Sugar Plum Fairy', 2020, IR201530, (*P. balansae* × *P. pseudolinearifolia*), Li Shu, Wen Fang, and Wei Yi-gang of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made Apr. 9, 2016, seeds planted Mar. 8, 2017, first flowering Apr. 5, 2018. Sterile, reproducible only vegetatively. Erect habit, stem 5-18 cm long. Leaves green, 9-18 cm long × 1.5-3 cm wide, linear, with cuneate base, acute tip, and entire margin, smooth, hairy, petiole 1.8-2 cm

long. Calyx split, green, 0.5 cm long. Pedicel 1-1.2 cm long, 3-6 flowers per axil. Corolla salverform, 2.5-3 cm long × 1.5 cm wide, pink. Flowers have pink lips with white tubes and yellow honeyguides. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Wu Gang', 2020, IR201531, (*P. gueilimensis* chance seedling selection), Wen Fang, Wei Yi-gang, and Li Shu of the Guangxi Institute of Botany, CAS & GCCC, Guilin, China. Cross made in Apr. 2018, seeds planted Jul. 3, 2018, first flowering Apr. 6, 2019. Fertile, true from seeds. Basal rosette, stem 1 cm long. Leaves green with white veins, 8-10 cm long × 5-7 cm wide, linear, with cuneate base, acute tip, and entire margin, hairy, petiole 2 cm long. Calyx split, green, 1 cm

long. Pedicel 0.8-1 cm long, 5-10 flowers per axil. Corolla salverform, 6 cm long × 5-6 cm wide, purple. This cultivar is the choice selection from wild stock with larger flowers and linear leaves. It was determined that this variation is stable and these desirable features are passed through seeds. Shade tolerant but enjoys bright scattered light; prefers moist but well-drained substrate; will not bear temperatures below freezing.



Primulina 'Girl in Purple', 2020, IR201532, (*P. pseudoeburnea* × *P. yungfuensis*), Haixia Yan, Shikai Guan, Jinye Zhou, and Dayan Tao of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made May 22, 2018, seeds planted Aug. 8, 2018, first flowering May 28, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaf blade light green to dark green with fine white veins, 9.2-11.1

cm long × 5.3-7.2 cm wide, elliptic to ovate, with cuneate base, acute tip, and crenate margin, hairy, petiole 3.8-6.7 cm long. Calyx split, dark brown, 1.3-1.7 cm long. Pedicel 1.3-3.4 cm, 3-10 flowers per axil. Corolla salverform, 4.9-5.4 cm long × 1.3-1.5 cm wide, purplish red. This variety requires strong but scattered light; prefers drier growing conditions and cannot tolerate waterlogged conditions.



Primulina 'Purple Dream', 2020, IR201533, (*P. minutimaculata* × *P. sp.*), Haixia Yan, Dayan Tao, Qian Song, and Shikai Guan of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made May 16, 2018, seeds planted Jun. 21, 2018, first flowering Jun. 6, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves green with white

veins, 9.1-12.7 cm long × 4.2-7.2 cm wide, linear to elliptic, with cuneate base, acute tip, and crenate margin, hairy, petiole 1.3-3.0 cm long. Calyx split, yellow, 1.3-1.6 cm long. Pedicel 2.1-3.9 cm long, 10-15 flowers per axil. Corolla salverform, 3.9-4.3 cm long × 0.9-1.0 cm wide, purple. This variety tolerant of dryness, high temperatures, shady conditions and direct strong sunlight; does not tolerate waterlogging or low temperatures, and needs protection at temperatures below 5°C.



Primulina 'Small Waist', 2020, IR201534, (*P. yungfuensis* × *P. minutimaculata*), Haixia Yan, Jinye Zhou, Dayan Tao, and Qian Song of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China. Cross made May 25, 2018, seeds planted Aug. 8, 2018, first flowering Jun. 2, 2020. Sterile, reproducible only vegetatively. Basal rosette. Leaves dark green, veins fine white, 5.5-6.8 cm long ×

3.8-5.1 cm wide, ovate, with cuneate base, acute tip, and entire to crenate margin, hairy, petiole 1.3-3.1 cm long. Calyx split, light green, 0.9-1.2 cm long. Pedicel 1.6-2.9 cm, 5-10 flowers per axil. Corolla salverform, 4.8-5.5 cm long × 1.0-1.2 cm wide, purplish. This variety requires bright scattered sunlight; has excellent tolerance to drought, heat, and shady conditions; requires loose soil; does not tolerate waterlogging.



Primulina 'Spring and Summer', 2020, IR201535, (*P. lijiangensis* × *P. longyi*), Haixia Yan, Qian Song, Shikai Guan, and Shuming Luo of the Flower Research Institute of Guangxi Academy of Agricultural Sciences, Nanning, China.) Cross made Apr. 11, 2018, seeds planted May 21, 2018, first flowering Feb. 15, 2020. Sterile, reproducible only vegetatively. Basal rosette.

Leaves dark green with purplish red reverse, 7.7-9.3 cm long × 4.7-6.5 cm wide, elliptic, with cuneate base, acute tip, and serrate margin, hairy, petiole 1.6-3.0 cm long. Calyx split, green, 0.6-0.7 cm long. Pedicel 0.6-1.2 cm long, 2-12 flowers per axil. Corolla salverform, 4.6-5.0 cm long × 1.4-1.7 cm wide, purple. The variety has strict requirements of high moisture and high oxygen levels in the growing medium; does not tolerate strong sunlight or high temperatures in summer.



Kohleria 'HS's Sweet Strawberry', 2020, IR201536, (*K. 'HCY's Dreamworld'* × *K. 'Ni's Donna'*), Ahmet Hilmi Sekitmen of Afyonkarahisar, Turkey. Cross made May 1, 2018, seeds planted Aug. 19, 2018, first flowering Jun. 1, 2019. Fertile, reproducible only vegetatively. Upright habit. Leaves dark green, 15 cm long × 9 cm wide, elliptic, with acute tip and scalloped margin, hairy, petiole 2.5 cm long. Calyx split, green, 1.2 cm long. Pedicel 7 cm long, 2 flowers per axil. Corolla salverform, 5.5 cm long × 4.5 cm wide, lower petals light yellow with red spots, top petals dark pink with red spots, tube dark pink, top petals have wavy edge. Easy to grow variety.

Prof. Wei Yi-Gang

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Plant Hunting in Vietnam

Stephen Maciejewski, Philadelphia, PA, USA ~ <teciu1949@gmail.com>



What a Welcome! Everywhere I went in China, I saw signs saying Happy 70th. Lucky me, that modern day China and I share the same birthyear!

the road signs? Are steep trails and slippery, jagged rocks an impediment, a challenge, or just part of the deal? Join me in the crazy world of the plant hunter as we take off on another adventure. Sure, there are risks, but the rewards will live on within you forever.

When the fatigue of the hunt sets in, there are always the dreams of tomorrow ... and food – new, different, delicious, even exotic, and a delight for all your senses. Then there are the people. You will meet many new folks, some for an hour, some for a day and, occasionally, you will start a friendship for a lifetime. One of the perks of plant exploring is forming new friendships that cross borders.

Are you ready? Maybe you really can't actually go now, or perhaps you are an armchair traveler, or dealing with Covid-19 travel restrictions. Whatever your circumstances, get ready for an exciting ride.

My third botanical trip to Vietnam was organized by Professors Wei Yi-Gang (who could not attend this trip) and Wen Fang. Both are taxonomists and botanists at the Gesneriad Conservation Center of China (GCCC) in Guilin. They did all of the pre-trip research, scouting out locations that might be productive to explore, hoping to find plants new to science. Dr. Do Van Truong, a botanist at the Vietnam National Museum of Nature, in Hanoi, Vietnam, choreographed the detailed travel arrangements in Vietnam. Others involved were my two friends, Zi-Bing Xin and Wen-ke Dong. Xin is a researcher at the GCCC (who spoke about his work on *Petrocodon* at the 2019 Gesneriad Convention in Cincinnati, Ohio). Wen-Ke Dong from Beijing, China, is a professional horticulturist and passionate plantsman. He is also the Cultivar Registrar for the American Begonia Society (ABS) and spoke at the September 2019 ABS Convention in Sacramento, California. It was easy for us to communicate with one another because English was the common language shared by all.

We visited locations in the northern part of Vietnam. They were exotic-sounding places like Mau Son Protected Forest Area, Tam Dao, Ba Vi, and Cuc Phuong National Parks, as well as the following Nature Reserves: Huu Lien, Thuong Tien, Ngoc Son-Ngo Luong, Xuan Nha, and Pu Luong. This was the most challenging trip I have ever been on. Traveling for a total of 34 days, with 19 days just in Vietnam, was exhausting. Looking for gesneriads and begonias, collecting other plants, and building bridges in the world of conservation were all exhilarating. My first visit to Vietnam was in 2013 (see the three-part series in *Gesneriads* 2Q14, 3Q14, and 1Q15); I returned in 2017 and again this time from October through November 2019.

ARE YOU INTERESTED IN SCIENCE and conservation? Excited to find a gesneriad never written about before? Would your heart skip a beat knowing that you just found a plant that has never been recorded in Vietnam? Thrilled that you were able to contribute to a nation's natural wealth? Would the discovery of this treasured plant motivate someone to save the habitat AND this species as we race the clock before the land is bulldozed for "improvements"?

How about immersing yourself in a different culture where you can't even read

Overview

I flew to China first. To get a visa to China and Vietnam, I needed a letter of invitation from my Vietnamese and Chinese hosts. A Chinese Tourist Visa cost \$160 plus a \$139 service charge; a Vietnamese Visa cost \$230 plus \$149 service fee for a total of \$678. The round-trip flight, nearly 8,000 miles one way, was the cheapest ever at about \$690, even with flight insurance. I flew from Philadelphia to Montreal, Canada, and then to Shanghai, China. The cost of the trip in Vietnam, including lodging, food, transportation, and park entrance fees was \$2,000 per person.

Interestingly, on my first trip to Vietnam in 2013, locals were celebrating the 70th anniversary of the founding of the Communist Party of Vietnam. When I arrived in China in 2019, people were celebrating the 70th anniversary of modern-day China. I was flattered to see countless celebratory displays all over China saying Happy 70th – it was also my 70th birthday!

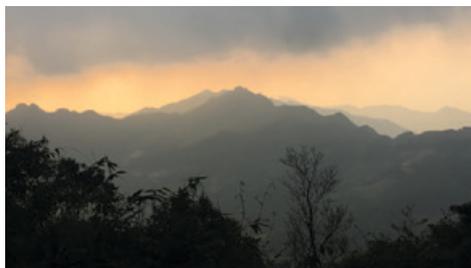
When I arrived in Shanghai, horticultural student Yanci Li met me, made all the local travel arrangements, took me to the hotel and then out for a wonderful dinner. Later I met my dear friend and traveling companion, Wen-Ke Dong. The next day we met Daike Tian, an expert on begonias and Nelumbonaceae (Lotus) at the Chenshan Botanical Garden in Shanghai. We got the grand tour and he showed us many beautiful plants as well as his incredible gesneriad collection, but that's another story, another article.

Day 1 (Monday, October 21, 2019)

Victor and I took an early morning flight from Shanghai to Nanning, China, near the Vietnam border and met Wen Fang and Zi-Bing Xin. We then proceeded to the Huu Nghi Quan international border crossing, Lang Son province. After we cleared customs, we met our Vietnamese guide, Do Van Truong, and our excellent and accommodating driver, Nguyen Van Hung. They



Plant hunters reunion. L. to R. Truong DoVan-our Vietnamese guide, botanist, and taxonomist. Zi-Bing Xin, researcher at The Gesneriad Conservation Center of China (GCCC) in Guilin. Wen Fang-botanist, in charge of the GCCC and Wen-Ke Dong, professional horticulturist and Cultivar Registrar for the American Begonia Society from Beijing, China.



Awesome first impression! We are all ready to explore. Photos by the author except where noted.

packed everything into the spacious van, and we were ready to start another exciting adventure. We botanized along the route as we headed to our first destination.

We planned to spend two days exploring the Mau Son Protected Area in Lang Son province, northeast Vietnam. The highest peak, Mount Mau Son, is above 1,600 meters and provided us with a glorious sunset. Years ago the area was only opened to the French,



Gyrocheilos chorisepalus growing on Phat Chi Mountain, Mau Son, Lang Son, Vietnam.

Loxostigma dongxingense (=former *Briggsia dongxingensis*) growing on Phat Chi Mountain, Mau Son district, Lang Son province, northeast Vietnam.

whose presence is recalled by some historic villas and abandoned buildings. Mau Son is the place to go to when you need to get away from the tropical heat. We stayed in a beautiful, old, decaying yet elegant stone structure surrounded by gardens. In the area of Phat Chi Mountain (Mau Son, Lang Son province), we found four notable gesneriad species.

Raphiocarpus sinicus is a shrub-like gesneriad that grows in shaded, damp forested areas. The International Union for the Conservation of Nature (IUCN) Conservation Status (hereafter referred to as CS) for this plant is Critically Endangered (CR).

Loxostigma dongxingensis has a beautiful yellow flower with a reddish brown striped throat.

Gyrocheilos chorisepalus, a perennial herb, prefers shady, rocky streamsides. Its CS is Endangered (EN).

Oreocharis argyreia is a species with an elegant purple flower. It prefers high elevations and is not easy to grow in cultivation. Its CS is Least Concern (LC).

After pressing our plants, we went to another villa for our dinner, wearing jackets and walking in the cool, foggy night. With Wen Fang around, visiting cats and dogs are always treated well at our table as he makes sure they always get the choice leftovers.

Day 2 (Tuesday, October 22, 2019)

I typically begin every morning with my special coffee – two inches of water in a water bottle with a pack of instant coffee with cream and sugar. A quick shake, then adding more water, and I have my morning dose of caffeine.

The day was quite refreshing with jackets needed again. We climbed to the highest peak but had no view because of the thick fog. At a lower elevation we stopped for breakfast at a place where the locals had a beautiful caged songbird, a black-throated laughingthrush (*Garrulax chinensis*). The plants we noticed drying in the sun nearby turned out to be the gesneriad species *Rhynchotechum longipes*, which is picked, dried, and used as medicine. It is a subshrub 30–35 cm that grows in forested areas. The CS is Endangered (EN).

Afterward, we started climbing up a very slippery, wide stream-bed made of massive flat rocks. Soon we



Rhynchotechum longipes, a medicinal gesneriad found dried at a roadside pharmacy near Love Falls.



Total destruction! Karst mountains bulldozed to create fill for building roads. Habitats destroyed even before being explored.



Rhynochotectum longipes, with fruits, at the Mau Son (Love Falls) Protected Forest Area. This is the very first scientific record of this plant for Vietnam. Photo: Wen Fang



Roadside pharmacy of medicinal plants for sale, including the gesneriad *Rhynochotectum longipes*. Photo: Wen Fang

found the same *Rhynochotectum longipes* growing along the trails. We collected some specimens for various herbarium collections in Vietnam and China. It was a new collection record for Vietnam.

Moving on to the next destination, we drove past some areas where entire karst hills were being demolished and bulldozed for use as a base for road construction. Soon these entire mountains would no longer exist! What happens to endemic plants native only to those hills?

Finally, we arrived at our local “homestay” residence for the next two nights. The huge wooden building had separate rooms containing hard-woven mats to sleep on, all surrounded by mosquito netting. The government is trying to get locals involved in catering to eco-tourists to help preserve this unique environment. We stayed here to help support their endeavor.

Day 3 (Wednesday, October 23, 2019)

The next two days were spent exploring the Huu Lien Nature Reserve (Huu Lung district, Lang Son province). It was established in 1986 to help conserve the karst limestone forest and the habitat of the musk deer. Many local ethnic people, members of the Kinh, Tay, Nung, and Dao groups, live here in various communes. They use and are dependent on forest resources. Huu Lien is part of the “Viet Bac” karst zone of the northeast section of Vietnam, and is the most significant section.

Our day started with meeting the staff of the Forest Reserve who even provided us with a guide armed with a machete. There was no trail so he made one, cutting a path straight up the mountain. Almost immediately, we saw a species of *Amorphophallus*.



Perfect companion plants: *Begonia langsonensis* and the new species *Primulina huulienensis* in Huu Lien, Huu Lung Protected Area, Lien District, Lang Son. Photo: Zi-Bing Xin.

We then found a fantastic gesneriad with red hairs growing under *Begonia langsonensis* – a perfect example of companion plants. (This new find has recently been published as *Primulina huulienensis* with a CS of CR.) If that wasn't enough, we then came across some adorable plants in the genus *Microchirita* with the most intense purple flowers. These may represent a new variety or species. We were all using social media, but Wen



This find resembles *Microchirita limbata*; however, the inner corolla of *M. limbata* is glandular (has hair-like structures) while the inner corolla of the plant we collected is glabrous (lacking surface ornamentation, smooth, without hairs of any kind). A new variety for now.



Primulina huulienensis. Photo: Wen Fang.

Fang cautioned us to be careful posting photos of rare plants that we were finding. Unscrupulous plant collectors could use the GPS information attached to the images to track down the location and collect all the plants to sell. From then on, I only posted pictures of scenery and people.

Of course, we always wanted to go farther in our travels even if there was a deep stream in the way. Don't worry, to cross over the creek to the other side there always seemed to be a fallen tree, often wet and slippery and sometimes with a handrail. A cat has nine lives – I wonder how many I have left? Later we were fortunate to see a possibly new *Paraboea* species and *Pseudochirita guangxiensis* var. *glauca* with thick hairs that give it a silvery appearance.

After a long day of hiking, we returned to our “homestay” to press our plants in the courtyard. Victor is so diligent. Every night he would work on, identify, and catalog the begonias we had collected. He is always cheerful and passionate about his love for begonias. He is the perfect traveling companion. Later, after the work was finished, we finally had dinner.

Day 4 (Thursday, October 24, 2019)

We started our morning explorations in the rain, armed with umbrellas and raincoats. It was warm but wet. Before 9 a.m. we had found our first gesneriad, possibly *Microchirita* sp. aff. *limbata*. If confirmed, this will be a new national collection record for Vietnam. It may be different and a new one for science, too. Patience – science takes time.



Field work in the rain. Another day at Huu Lien Nature Reserve. L to R: Zi-Bing Xin, Wen-Ke Dong, Wen Fang, and Do Van Truong.

and his wife, Lu Thi Ngan, Ph.D. She is also a botanist who works at the Vietnam National Museum of Nature and was one of the guides during our 2013 trip. Their very chatty young daughter, Do Lu Khanh Huyen, was also there. We had a feast at the very modern and trendy Pao Restaurant where we had the table height adjusted so that we could all sit comfortably, crossed-legged for some.



Pseudochirita guangxiensis var. *glauca* at Huu Lien, in the Huu Lung Protected Area.

Day 5 (Friday, October 25, 2019)

We were happy to visit the Vietnam National Museum of Nature once again. I had previously been there in 2013 and 2017 and had given presentations on my explorations and work to conserve gesneriads. We also met with Director-General Nguyen Trung Minh.

For years now, there has been much discussion about opening a conservation center in Vietnam modeled after the Gesneriad Conservation Center of China (GCCC) in Guilin. During this visit, we saw the map, drawings, and plans for the new museum and the combination Begonia/Gesneriad Conservation Center of Vietnam (B/GCCV). The property was acquired, and recently had even been extended by adding a nearby karst mountain to the site. Botanists, researchers, conservationists, and plant enthusiasts from around the world will be welcomed to visit and study. Once construction is completed, visitors will even be able to stay on-site, so start thinking about your visit!

We all received beautiful gift books about the museum from the Director-General. I gave him copies of *Gesneriads*, pins, and T-shirts. (In recognition of my bridge-building work, Gesneriad Society president Mel Grice graciously calls me The Gesneriad Society's Ambassador. As Co-Chair of the Society's Conservation Committee, I like being a bridge-builder and am very interested in these long-term conservation plans.)

After visiting the museum and looking at the informative natural history displays, we left Hanoi and headed back to the field. We were now on our way to Tam Dao National Park (Tam Dao town, Vinh Phuc province). En route, we found *Henckelia anachoreta*, a scrambling subshrub (CS is LC). Later we discovered a species of *Raphiocarpus* that may be a new species.

We finally arrived at Tam Dao mountain resort, just in time to check into our rooms and go for a little walk before dinner. The architecture is a mix of European, especially English, French, and Swiss design. The foggy atmosphere added to the welcoming mountain ambiance.

Right: *Raphiocarpus* species (may be new) found in the Tam Dao National Park Area.

Far right, *Henckelia anachoreta* found on the way to Tam Dao National Park.



Director-General Nguyen Trung Minh of the Vietnam National Museum of Nature in Hanoi and Stephen Maciejewski exchanging gifts. Exciting to see his plans for the new museum and the new Begonia/Gesneriad Conservation Center of Vietnam (B/GCCV).



Day 6 (Saturday, October 26, 2019)

Breakfast, a large bowl of delicious noodle soup with your choice of meats and vegetables, was served in a restaurant in the middle of this old town built by the French in 1907. Tam Dao means three islands and refers to the three highest peaks that often stand out over the clouds. The area was designated a Conservation Forest in 1977 and a National Park in 1996.

Soon we were off for what some signs characterized as “BioFun” or exploring nature. We passed by decaying doors and elegant palace-like structures, side by side, as we took a short walk from the hotel to the park. To enter the park, we followed a path under tented walkways filled with smoky food stands.



Lysionotus chingii, found in the Ba Vi National Park. Photo: Wen Fang



Lysionotus pauciflorus, a common small shrub, found in the Ba Vi National Park.



Pseudochirita guangxiensis var. *glauca*, found at the Ba Vi National Park.

A dizzying series of stone steps led us higher and higher up the mountain path through temples and heavily forested areas, very diverse environments with over eight different forest types. Along the route I even got to meet “Ton Ngo Khong,” a Monkey god, king, and man, who appears in the classic Chinese novel, *Journey to the West*, later adapted into a popular film. He’s a combination of Shakespeare’s Puck, Robin Hood, and Hell Boy, representing the inner strength that all humans embody.



Raphiocarpus species, perhaps new, commonly found in our travels in Tam Dao but not listed in the Flora of Vietnam.

We left the park around noon and headed to Ba Vi National Park (located in the Ba Vi district of Hanoi). It was another rewarding day finding many plant treasures including a species of *Raphiocarpus*; *Lysionotus chingii*, a scrambling shrub (CS is Data Deficient DD); *Raphiocarpus tamdaoensis*; *Henckelia anachoreta*, an annual herb (CS is LC); *Primulina swinglei*, a perennial herb (CS is LC); *Rhynchoetichum ellipticum*, a subshrub (CS is LC); *Lysionotus pauciflorus*, a small shrub (CS is LC); and an *Aechynanthus* species. After pressing our extensive collection of plants, we enjoyed a hot-pot feast and many, many toasts drinking Truong's homebrew of rice wine flavored with bananas.

Day 7 (Sunday, October 27, 2019)

We spent the next day traveling to Thuong Tien Nature Reserve (Kim Boi district, Hoa Binh province). Before we left the hotel, we admired some of the fruit trees in the garden, including carambola (star fruit) and pomelo (*Citrus maxima*). The latter is the largest citrus fruit and is native to Vietnam. On our drive to the Thuong Tien Nature Reserve, we stopped by some caves as was our habit. We spotted a long *Elaphe moellendorffi*, also called Moellendorf's, the flower, or rat snake. They are known to live in the



Henckelia ceratoscyphus, at Tu Son Waterfalls.



Rhynchoetichum longipes with fruits, near Tu Son Waterfalls.

karst mountains in north and central Vietnam. As we drove on, it was shocking to see bulldozers taking down karst mountains to be used for road fill. Perhaps a home for some unique gesneriads was just being destroyed?

We finally arrived at the reserve and were greeted by a pair of enormous golden dragons guarding the entranceway. It was an easy-going walk, although wet and a little slippery. We botanized along the way to a beautiful waterfall, complete with a small temple. It was a picturesque place to rest up before crossing the rickety bamboo bridge for further explorations.

Today we found *Henckelia ceratoscyphus*; *Rhynchoetichum longipes*, a subshrub (CS is LC); and a *Paraboea* species. Afterward, we headed to our hotel for the evening ritual of pressing plants, followed by dinner and drinks.



Tetraphylloides confertiflora (showing underside and top of leaves), found at Truong Son.

Day 8 (Monday, October 28, 2019)

We started the day meeting formally with the staff of the Thuong Tien Nature Reserve. As was typical at the parks we visited, a bust of Ho Chi Minh (Uncle Ho), the Father of Modern Vietnam, was there on a pedestal with the worker's tools of the hammer and sickle in the background. We exchanged documents that we had obtained earlier granting us permission to explore and collect plants at each location. Tea was always served in a very cordial but formal atmosphere. This was standard at every National Park or Nature Reserve.

After these meetings, we typically would chat with the staff and make plans for the day. They were always so protective and would send one or more Forest Rangers to guide us. Today they checked out our footwear, making sure we were prepared for leeches; they even brushed them with liquid repellent to keep the leeches off. Pant legs were tucked into socks for those who were not already wearing special anti-leech socks.



Tetraphylloides confertiflora, found at Trurong Son.



Forest Ranger Tran Son Quynh at the Thuong Tien Nature Reserve.

After a long hike on a trail and meeting some locals (one of whom had collected a very interesting begonia), we returned to headquarters. There we learned that lunch had been prepared for us. Actually, it was a feast and a total surprise. Tran Son Quynh, one of the Forest Rangers, was in charge and put out a lavish display. We stayed a long time enjoying everyone's companionship. I gave away copies of our journal *Gesneriads* and chocolate bars, and also branded Quynh with a cap from Philadelphia. I was sad to leave such hospitable people, but the road called.

After riding a long time, we briefly stopped at the headquarters of the next nature reserve we would visit, Ngoc Son-Ngo Luong Nature Reserve, where Wen Fang had been bitten on his hand by a leech. It was getting late, so we moved on to our next residence. After a delicious dinner we settled in for the night in our dorm-style accommodations. We had collected lots of plants today, including some begonias.

Day 9 (Tuesday, October 29, 2019)

We woke up to a bright, sunny day and had a bowl of soup at the Mu Stream Inn where we stayed for a couple of nights. Then it was off to the field to see what gesneriads were in this area. It was a very strenuous climb up the side of a mountain with no visible trail. We found leeches, too. They are fast, and frenetic as hungry mosquitos. We were more than halfway up when some of our crew decided to go back down. It was too hot, and at times it felt almost like a vertical climb.

Unfortunately, on the way back a leech got into my pants. How? Perhaps when I was sliding down the hill on my butt because the terrain was so steep. I did not realize it until one of the Forest Rangers pointed to the blood on my pants. At first I thought I had cut



Paraboea sinensis, a subshrub found at Ngoc Son-Ngo Luong Nature Reserve.



This should be a species of *Anna*, looking most similar to *Anna submontana*, but with some differences so it needs further study. Found at Ngoc Son-Ngo Luong Nature Reserve. Photo: Wen Fang

myself on the jagged rocks but could not find a tear on my hiking pants. Then I remembered that I had a red-colored energy drink in my packsack and I was sure I had punctured it, but, no, it was intact. OMG! I must have been bitten by a leech even though I had sprayed my feet and all open surfaces with OFF!®. My socks were over my pant legs, so I could not imagine how it got in. My hiking pants have zippers at the knees so you can turn them into shorts. I soon discovered that where the zipper closes, there was a very tiny opening, perhaps smaller than an eighth of an inch, but big enough for that leech to get in. After feasting, it could not get out. Back at the van, I stripped and cleaned up the wound and put a bandage on it. I survived my first leech bite! I had been so apprehensive about it because I usually faint at the sight of

blood – a possible complication when you are on top of a mountain. New experiences can make me nervous with anticipatory anxiety, but now when it comes to leeches, I am no longer a virgin.

Soon we were all together again and had lunch. Rice was served, shaped like a cone. We had a dipping container of salted crushed peanuts. Then it was back exploring in a different location. We found ten different gesneriads including *Lysionotus chingii*, a scrambling shrub (CS is DD); *Hemiboea cavaleriei* var.

paucinervis, a perennial rhizomatous herb



Lysionotus aeschynanthoides (Conservation Status: Data Deficient).

(CS is Currently Safe); a species of *Anna*; *Stauranthera grandiflora*, a perennial herb (CS is DD); *Lysionotus aeschynanthoides*, a subshrub (CS is DD); a species of *Paraboea*; a *Rhynchotechum* species; *Hemiboea sinovietnamica*; a different *Paraboea* species; and *Lysionotus pauciflorus*, a small shrub (CS is LC).



Anna sp. aff. *submontana* may be a new species but needs further research. Found at Ngoc Son-Ngo Luong Nature Reserve.

Hemiboea cavaleriei var. *paucinervis* (perennial herb, rhizomatous, Conservation Status - Currently Safe). Photo: Wen Fang.

Our collecting bags were full. I felt fine after the leech bite, but our guide was worried because my wound kept bleeding. Forest Ranger Tuyen Ngoc Son cut a long bamboo pole and made a sturdy yet flexible walking stick for me. I realized something was wrong because everyone took photos of the backside of my lower right leg that had become encrusted with blood.

When we arrived at the Inn, Truong told me he was going to get some medicine for me. He collected a common invasive weed called *Chromolaena odorata* to stop the bleeding. It is native to the USA but has been introduced into Asia and is used in Vietnam to heal wounds. First, he macerated the leaves in his mouth, then applied it directly to the wound and bandaged it with way too much adhesive tape. I wondered if the cure would be worse than the bite? I was given instruction to just sit, do nothing, and let the medicine stop the bleeding. It worked. (Later I learned that this plant possesses alkaloids that may have anti-cancer, anti-diabetic, antihepatotoxic, anti-inflammatory, anti-microbial, and antioxidant properties, but may also contain carcinogenic substances.) Dinner was served, and the plants were pressed.

To be continued in next issue

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Coming Events

Ray Coyle and Karyn Cichocki <events@gesneriadsociety.org>

Due to the current pandemic, numerous chapter and affiliate shows have been canceled. Some are being replaced by virtual (online) shows, others are being postponed. Live shows will resume when public health guidance permits. Because of the difficulty predicting when this will happen, please check for updates on the events page on the Society website <<https://www.gesneriadsociety.org/events/>>.

If you would like your live or virtual event listed in our journal and on the website, please email the information to events@gesneriadsociety.org. We often receive notices too late for publication in *Gesneriads*, so please send your information as early as possible. Although the event can be posted on the website at any time, there is a three-month lead time for the journal.

Kindly use the following dates as a guideline for sending your club's information so it can be forwarded to our editor:

- **February** issue deadline: **October 15**
- **August** issue deadline: **April 15**
- **May** issue deadline: **January 15**
- **November** issue deadline: **July 15**

When sending information, please include the name of the facility where the event is being held, the address, dates and times, and a contact for further information. It is extremely helpful if you can submit the information in our standard format. Thank you for your cooperation, as this will help smooth out the process and assure that your publicity will appear accurately and in time for your event.

—Ray Coyle and Karyn Cichocki

∞ Seed Fund Promotional Contest ∞

To encourage donations to The Gesneriad Society's Seed Fund, a contest began on January 1, 2020. First and second place prizes will be given to the persons making the most Seed Fund donations throughout the year. The number of individual types of seed contributed (not the number of seeds) will be tracked from January 1 through December 31, 2020. The prizes (\$25 for first and \$15 for second) will be gift certificates of the winners' choice below:

- ∞ SEED FUND ∞ COMMERCIAL GROWER OF WINNER'S CHOICE ∞
- ∞ GESNERIAD SOCIETY WEBSTORE ∞ CONVENTION PLANT SALES ∞



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“OZARK” Sinningias, African Violets and other Gesneriads. Dave's Violets, 1372 S. Kentwood Avenue, Springfield, MO 65804 (417) 887-8904 Email: <plantman57@att.net> (no catalog). www.davesviolets.com.

MRS STREP STREPS – Streptocarpus, Primulinas, and other Gesneriads. Email for list of available plants. Kathy Spissman, 4086 Brownlee Dr., Tucker, GA 30084. Phone (770) 939-5289. Email: <mrsstrepstrops@comcast.net>.

Botanical Review No. 50

Bob Stewart ~ Stow, MA, USA ~ <aeschynanthus@verizon.net>

Notes on *Cyrtandra* (Gesneriaceae) from Japan, Taiwan and Batan Island (Philippines). K. Nishii, G. Kokubugata, M. Möller & H. J. Atkins. *Edinburgh Journal of Botany* 76: 333–344. 2019.

Plants in the genus *Cyrtandra* are found across a wide region of the Pacific, from Malaysia and New Guinea past Taiwan and across to Hawaii. However, they are seldom seen in cultivation. They are large, and they require high humidity, and this is an awkward combination. In most species the flowers are small for the size of the plant, and the flowers in most species are white.

This short paper deals with sorting out the relationships of three species: *Cyrtandra umbellifera*, *Cyrtandra yaeyamae*, and *Cyrtandra cumingii*. In particular, *Cyrtandra yaeyamae* has been listed at various times as a species, a variety of *Cyrtandra cumingii*, or a synonym of *Cyrtandra cumingii*.

Botanists in the past have had to sort out relationships by looking at visible characteristics of dried pressed specimens of a very few samples and only limited information on where they are found. It can be difficult to tell whether small differences in dried specimens are important and are typical of the entire population in a region, or whether they are just chance individual variations in plants.

With the availability of DNA sequencing, there is at least the hope that differences of opinion can be sorted out on a rational basis. There is also the fainter hope that such questions can be settled for the last time.

In this case, the authors obtained samples from the species named above and a few others from the region and performed analysis of the DNA sequences. The details of the procedure are in the paper. The results and discussion show both the usefulness of the method and some of its limitations.

Regarding *Cyrtandra umbellifera*, the DNA results show that it is distinct from the other species, and also show that it is possible to distinguish between the plants found on Batan Island (a small part of the Philippines north of the main islands but south of Taiwan) and those found on Taiwan. The authors were unable to find any morphological difference to distinguish the two groups, so they consider it to be a single species. You will see that if some future worker were to discover a morphological distinction, then this species could be split into two species.

Cyrtandra yaeyamae of the Ryukyu Islands (a chain reaching down from Japan toward Taiwan) is shown to be quite distinct in DNA from *Cyrtandra cumingii* of the Philippines. It also has morphological differences, such as larger flowers and more lateral veins on the leaves, so it is resurrected as a full species.

From shoot to leaf: Step-wise shifts in meristem and KNOX1 activity correlate with the evolution of a unifoliate body plan in Gesneriaceae. Kanae Nishii, Bing-Hong Huang, Chun-Neng Wang & Michael Möller. *Development Genes and Evolution* 227(1). 2016. DOI: 10.1007/S00427-016-0568-x.

It is well known to gesneriad growers that the Old World species have the odd feature that the two cotyledons (seed leaves) develop unequally. This differs from the behavior of the New World gesneriads, and indeed from most two-cotyledon plants that we are familiar with that have equal cotyledons. We have all seen seeds of beans or other plants sprouting, where the two seed leaves are pushed up out of the ground and are of substantially equal size.

There is the further oddity that some Old World gesneriads develop one of the cotyledons into a phyllomorph (“leaf”) which is sometimes the only “leaf” of the plant.

The above-ground parts of the plant arise from a basal meristem. (A meristem is a group of cells growing indefinitely and is responsible for producing new cells for the plant.) These unifoliate plants lack normal shoots and lack the shoot apical meristem, the source of leaves and branches in most plants.

It is clear that there must be genetic differences underlying these odd features. The authors of the present paper explore some of the genetics involved.

They compared activities of several genes in a sample of gesneriads with samples from the related families Calceolariaceae and Plantaginaceae (cousins from the order Lamiales) and *Arabidopsis* from the more distantly related order Brassicales.

KNOX1 is a gene that is a member of the homeobox gene family. The homeobox genes are active in the early development of plants and animals. They act somewhat like “master regulators” for controlling the activity of other genes. They act by causing the production of a particular type of protein that attaches itself to DNA. Any changes in these genes can have far-reaching consequences; they were first discovered in mutant fruit flies that grew “legs” where their antennae were supposed to be. Of course, a “lucky” mutation in these genes and their regulation can also have far-reaching consequences, and such mutations may be important in driving biological diversity.

STM is SHOOTMERISTEMLESS, one of the things regulated by KNOX1. Despite the name assigned to this gene, there is evidence from studies by other authors that although STM mutations can produce plants that superficially resemble unifoliate plants, this gene is not responsible for unifoliate *Streptocarpus*. In this paper, they study STM expression as a way of detecting where within the plant meristem tissue is active.

In all the studied plants from order Lamiales with equal cotyledons, there is cell division activity in the lower parts of the cotyledons for the first few days, but it ceases by day 10. In plants with unequal cotyledons, cell division in the larger cotyledon is still happening at day 20. Expression of the STM gene in the cotyledons correlates with cell division activity.

In Old World gesneriads with stems, the unequal cotyledon stage of development delays the development of the shoot apical meristem, but it eventually forms, and the plant develops in a “normal” fashion.

In acaulescent *Streptocarpus*, the shoot apical meristem never forms. The “leaf,” a.k.a. phyllo-morph, a.k.a. macrocotyledon, grows from a basal meristem. In the rosulate species, additional leaves can form from a “groove meristem” on the bottom side of the “petiole.”

They also studied the growth patterns of the leaves. Leaves can grow from cell division forming more cells, and from enlargement of each cell. In their sample from the snapdragon family, cell division ceases when the leaf reaches about 10% of final size. In their sample from the calceolarias, cell division ceases when the leaf reaches about 20-30% of final size. In gesneriads with stems, both Old World and New World, cell division ceases when the leaf reaches about 50-60% of final size. In stemless *Streptocarpus* species, cell division continues until the leaf is essentially full size. Formation of lateral veins followed a similar pattern.

The authors discuss a trend in cell division in cotyledons. In families distant from gesneriads, cell division in cotyledons is very restricted. In families somewhat more closely related to gesneriads, cell division occurs throughout the cotyledons, but it ceases before the cotyledons unfurl. In families even closer to gesneriads, cell division in the cotyledons is progressively more restricted to the base of the cotyledons. The Old World gesneriads show a distinct split, with a greatly extended period of cell division in the larger cotyledon, while in the other cotyledon cell division ceases as in “normal” plants. In addition, the unifoliate species show cell division that increases the thickness of the larger cotyledon instead of just the area of the cotyledon as in most plants; this

is important to form enough thickness to support a large “leaf.” The unifoliate species also show a strong tendency to concentrate cell division at the base of the cotyledon beginning early in development.

The authors hypothesize a series of steps leading from “ordinary” plants like *Arabidopsis* with KNOX1 only active in the shoot apical meristem, through snapdragons with KNOX1 also active in cotyledons, through calceolarias with additional KNOX1 expression in early stages of foliage leaf development, to the New World gesneriads, where KNOX1 expression in foliage leaves can be associated with anisophylly (leaves unequal in the pair), to the Old World gesneriads where the cotyledons become unequal, then to acaulescent *Streptocarpus* where extended growth of the cotyledon suppresses the development of a shoot. The view here is that the development of unifoliate species is not genetically “one big change” but rather is a series of steps, each step presumably useful to the plant in its own right and thus preserved by evolution and available for the next step.

Of course, there are always more questions. What determines which cotyledon grows; is it predestined in the seed, or do the cotyledons “fight it out,” or does the one that happens to be lower grow so that it can drape down the bank more conveniently, or what? And for the pseudo-unifoliate *Sinningia* species, what determines which leaf grows?

Pollination ecology of the neotropical gesneriad *Gloxinia perennis*: Chemical composition and temporal fluctuation of floral perfume. C. Martel, G. Gerlach, M. Ayasse & P. Milet-Pinheiro. *Plant Biology* 21: 723-731. 2019.

The authors have found that pollination in this species is performed by male euglossine bees. In North America, this group of bees is represented by small bright green bees sometimes called “sweat bees.” In tropical America, this group of bees is large and diverse, with a large range of sizes and colors. The bees have an interesting breeding system. The male bees visit flowers to gather fragrances, which they later waft into the air from display perches to attract females.

Many tropical flowers are adapted to encourage these visits by creating fragrant chemicals. The shapes of the flowers and their methods of presenting pollen and stigma are adapted to cause the visiting bees to have pollen applied and to deposit pollen on the stigma. This system is well known in tropical orchids, but in gesneriads has so far been found only in *Gloxinia* and *Drymonia*.

Gloxinia perennis produces large bell-shaped violet flowers (about 4 cm or 1.5") with a strong scent, which the authors describe as caraway-like. The flowers do not produce nectar or pollen as rewards for visits. As far back as 1864 it was noticed that the flowers were visited by the same insects as *Catasetum* orchids. The motivation for these visits was unclear until the work of Stefan Vogel in 1966, who figured out the fragrance-collecting behavior.

Field work was carried out in February and March at two locations in the rain forest of Central Peru. By North American standards, the climate is rather warm and very wet; this may provide a cultural hint. The plants grow in places that are exposed to sunlight, such as along roads and streams. The blooming period in Peru is January to April; this would be the mid-to-late part of the warmer and wetter season.

The authors measured flower sizes, checked stigma receptivity (see the next review), observed insect visits, recorded fruit set, and analyzed the fragrance chemicals.

Flower size variation had a standard deviation of about 10% of the mean. That is, almost 70% were within $\pm 10\%$ of average size.

They checked the timing of flower opening. Mature buds started unfolding about 8PM on the night before opening, and anthers started to open at about 10 PM. 84%

of the flowers were fully open by 5 AM the following morning, and all were open by 7 AM. The style extended during the first hours of flower opening, and it reached its final position between 10 AM and 12 noon on opening day. This final position is in contact with the anthers, so the flower can possibly self-pollinate if no bees show up to do the job. The flowers superficially look as though the male parts are ready first (protandrous), but testing showed that the stigma was receptive while still in bud a full day before flower opening! Flowers lasted one or two days if insects were excluded. If pollinators were allowed, most flowers were pollinated, and the corollas fell on the same days they opened. Pollination success was excellent, and experimental hand pollination was also very successful.

Several species of bee visited the flowers, but only *Eulaema cingulata* and *Eulaema meriana* were large enough and had the correct behavior to cause pollination. The activities of these bee species started at sunrise and lasted until 1 PM. Notice that the timings of flower opening and pollinator activity are correlated.

Chemical analysis of the fragrance yielded 16 compounds of which 15 were identified. The major compounds were (E)-carvone epoxide, limonene, carvone, and (E)-limonene epoxide. The (E)-carvone epoxide is shown by tests to be particularly attractive to the bees involved. Carvone is found in caraway seed oil, spearmint, and dill. This chemical occurs in both left-hand and right-hand forms and these forms have different smells, one like caraway seed and the other like spearmint. Limonene also has left-hand and right-hand forms; one smells of citrus peel and the other is found in mint oils and smells more like pine. Plants generally only produce one of the two forms of these chemicals.

Fragrance emission increased from 6 AM to 9 AM, held steady to noon, then decreased considerably. Again, this matches the bee activity times. There is a lesson here. If you are checking your plants for fragrance, then you need to try at different times of day.

A rapid and simple procedure to determine stigma receptivity. A. Dafni & M. Motta Maués. *Sexual Plant Reproduction* 11: 177-180. 1998 (also presented in *Simpósio silvicultura na Amazônia oriental*, 1999).

This will be interesting to anyone who wants to discover the best time to apply pollen for producing seed. The authors compare several published tests for stigma receptivity. The tests are based on the observation that enzyme activity is higher on a receptive stigma, and in particular that a peroxidase enzyme is expressed.

The best test was to press a piece of PEROXSTEMO KO test paper to the stigma. A blue color indicates the presence of peroxidase enzyme. The test was quite accurate, and it showed exactly where the receptive region was located. The test paper alone does not work on dry stigmas, but if the paper is first briefly dipped in distilled water the test is effective. A disadvantage is that the test paper may be expensive; I found one site that said \$135 for a pack of 100.

A simple and inexpensive test was to apply a small drop of 6% hydrogen peroxide to the stigma and count the bubbles that are produced. More bubbles indicate greater receptivity. The concentration is not critical; other authors have used a 5% or 10% solution. You would probably need powerful magnification to count bubbles, so it might be necessary to apply the test to cut-off stigmas. Another disadvantage is that the test can also react to old stigmas that are past their receptive period, so it is most useful for detecting the beginning of receptivity.

“Baker’s Test” for the enzyme alcohol dehydrogenase was accurate, but it does not work on dry stigmas and it takes 30 minutes plus some pre-test preparation.

The “PEREX test” is simple, but it contains sulfuric acid, so it requires careful handling and is not appropriate outside a lab.

With any of these tests, it ought to be possible to build up a data base of receptive periods by species, if you have enough flowers. You could test for receptivity every hour (for short-lived flowers) or day (for long-lived flowers) after the flower opens and record the results. We would probably find that each species shows consistent timing. We might find that the timing is consistent across groups of species; for example, it might be the case that most hooded columneas have the same timing.

Identifying the organisms found in simple ecological communities associated with Begonias growing in terraria. Kraushaar & M. C. Tebbitt. *Begonian* 82: 98-103. May/June 2015.

Growers with plants in closed containers sometimes find that they are growing more than they bargained for. Typical issues are cobweb-like growths over the soil surface or slime on the container walls. Despite their common occurrence, apparently nobody had figured out what they were. This paper reports tracking down the identities of the offending organisms in one grower's terraria.

The cobweb-like growths turned out to be two types of fungus. The most common was in the genus *Trichoderma*, which is related to *Penicillium*. The second fungus was probably from the genus *Ulocladium*.

The slime coating turned out to be six different organisms living together as a biofilm.

The most abundant member was a colonial single-celled green algae *Asterococcus*. Each of the extremely tiny cells is surrounded by a thick sheath of mucus that prevents the cell from drying out.

A second component is a slime-coated photosynthetic cyanobacterium *Gloeocapsa*. Two other cyanobacteria were also found. One was in the genus *Oscillatoria*, and the other is in the family Nostocaceae.

There were also unidentified large single-celled yellowish green alga with a red eyespot.

The largest member of the biofilm was a tiny predatory nematode worm that feeds on the other organisms.

The slime film organisms may be unsightly, but they are unlikely to harm your desired plants. They are not plant-eating organisms and are generally confined to the glass walls of the container.

The *Trichoderma* fungus is also unlikely to attack plants directly, though it may cause trouble by burying small plants. It may be of interest that at least one species, *Trichoderma viride*, is used as a bio-fungicide; it attacks other fungus types. It also causes green mold on onions. A related species, *T. reesei*, is used in producing stonewashed jeans. It secretes an enzyme that attacks and degrades the cellulose of the cotton cloth.

The fungal genus *Ulocladium* contains some members that attack plants, so it might be troublesome. Some varieties are used as control agents against other fungi. It sometimes invades wet places in homes, and there are recent reports that it can cause fungal disease in humans.

The paper contains a set of photographs through a microscope to illustrate the organisms.

A new species of *Alsobia* (Gesneriaceae) from Belize, with a synopsis of the genus. F. R. Barrie, L. E. Skog & J. L. Clark. *Novon* 26: 1-8. 2018.

This paper creates *Alsobia baroniae* L. E. Skog & Barrie, the fourth species in the genus. The leaf blades of the new species are 10-26 cm (4-10 inches) long, quite large compared to the other known species. The corolla is densely pilose (covered with long soft hairs) outside, with hairs about 5 mm long; corollas of the other species are tomentose (covered with densely matted woolly hairs) with hairs 1 mm long or less.

A key to the four species is included. *Alsobia dianthiflora* is quickly distinguished by thin stolons 1-2 mm in diameter. Of the three species with thicker stolons, the new species is quickly distinguished by the large leaf blades. *Alsobia chiapensis* has calyx lobes about 10 mm long, and the flower has fimbriate (covered with finger-like projections) edges. *Alsobia punctata* has calyx lobes 14-19 mm long, and the flower has erose (rough as though gnawed) edges.

The new species grows on limestone rock faces like *Alsobia chiapensis* rather than on trees like the other two species. It was found at relatively low altitude, so it may prefer warm temperatures.

The paper includes descriptions and photographs of all four species, plus a botanical drawing of the new species.

New circumscription and segregation of *Gloxinia major* (Gesneriaceae, Gesnerieae, Gloxininae) an endemic species from Bolivia. M. A. Lizarazu & C. A. Zanotti. *Phytotaxa* 436(3): 237-250. 2020.

There is a plant from modest altitude in southern Bolivia known as *Koellikeria major* that has been a taxonomic problem child. It looks much like the plant once called *Koellikeria erinoides* and now called *Gloxinia erinoides*, so it has been treated as a synonym of that species. The authors report a molecular and morphological analysis to show that *K. major* is a distinct species and they formally create the name *Gloxinia major* for it.

The genus *Gloxinia* now includes five species, the other four being *G. perennis*, *G. erinoides*, *G. xanthophylla*, and *G. alterniflora*.

Gloxinia major differs from the similar *G. erinoides* by having larger leaves with a green lower surface, the corolla upright in the calyx rather than slanted, and the corolla lobes almost symmetric rather than having the upper lobes distinctly smaller. If you like one of these species, then you may like the other. It has only been collected twice in 100 years, so it may not be easy to acquire.

It is found at 600-1000 m altitude. The area has annual temperatures between 18-23°C and rainfall of 500-750 mm.

Photographs and drawings are included.

In Memoriam



Barbara Elkin at the 2003 AGGS Convention

Barbara Elkin passed away August 12, 2020 in Auburn CA. She was a member of Delta Gesneriad and African Violet Society since 1987 and had served multiple times as President.

She was a retired gesneriad judge and had served as local Chair for the 2003 AGGS Convention in Sacramento, California. Her enthusiasm for the plants and for our Society will be greatly missed.



Vivian at the 2005 AGGS Convention in Portland, OR

Vivian Scheans passed away on June 14, 2020. A longstanding member of The Gesneriad Society and the Mount Hood Gesneriad Society, Vivian was an avid botanist who traveled to

Central and South America with the Gesneriad Research Foundation to find new species of gesneriads. She also served as local Chair for the 2005 AGGS Convention in Portland, Oregon.

Donations

Austin Greivous, Development Chairperson ~ University Place, WA, USA ~
<aagreivous@gmail.com>

INDIVIDUAL DONATIONS FROM MEMBERS AND CHAPTERS

throughout the year enable The Gesneriad Society to meet its needs for future research, scholarships, student grants, convention speakers, and conservation activities. These funds are dependent on donations specified for the individual donation funds. Please consider making a financial gift to any of these funds when you renew your membership or anytime through The Gesneriad Society's online store.

The following \$3,265 tax deductible donations were made to The Gesneriad Society during the period of January to June 2020. Each donor's generosity is greatly appreciated.

FRANCES BATCHELLER ENDOWMENT FUND – \$75

Marie Hanft
Diantha Levoie

CONSERVATION FUND – \$2,065

Karyn Cichocki in memory of Nancy Carr

Susan Grose
Vivian Hiltz
Molly Schneider

Marcia Shearer
Gillian Smith with thanks to Elaine Stutt for shared rhizomes

Cynthia Wyatt in memory of Carol Ann Bonner

Tennessee Gesneriad Society

The Liberty Bell Gesneriad Society in gratitude to Betsy Branson, Laura Buckner, Barbara Borleske, Joseph Palagonia, Marilyn Heinrich, Rosemary Platz, Karyn Cichocki, Jill Fischer, and Ginny Heatter for serving as gesneriad judges at the 2020 Philadelphia Flower Show

The New England Chapter in memory of Judy Becker

Mt Hood Gesneriad Society
Puget Sound Gesneriad Society

ELVIN MCDONALD RESEARCH ENDOWMENT FUND – \$35

Marc Devoir
Paula Whitlock

NELLIE D. SLEETH SCHOLARSHIP ENDOWMENT FUND

No donations during this time

STUDENTS AND SPEAKERS CONVENTION FUND – \$340

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Connie Leifeste
Holly Pohl

The December 2020 Annual Appeal will be for the Nellie D. Sleeth Scholarship Endowment Fund.

Seed Fund Donations

Donations mailed from anywhere should be sent to:

Karyn Cichocki, 79 Beaver Run Road, Lafayette, NJ 07848

Leaf Support and Propagation

Dale Martens ~ Sherrard, IL, USA ~ <dalemartens@mchsi.com>



IN THE AFRICAN VIOLET WORLD, PLASTIC LEAF support rings are used to help hold up leaves. If one uses a leaf ring larger than the plant, then it protects the plant during travel to show. In both cases, once at the show, the support rings are removed. These attach to the pot with a rubber band. Actually, I put an additional thick rubber band around the rim of the pot but under the ring's rubber band to stop the ring from slipping down due to the heavy weight, so consider that additional rubber band, too.

I brought up the subject in a recent Facebook discussion of how to best support a streptocarpus that grew in a rosette/starfish shape to help leaves not twist. I responded with a photo showing an African violet support ring holding up leaves on a seedling I later named *S.* 'Heartland's Baby Kisses'. Then I mentioned the rings could also be used for other gesneriads such as *Petrosmea*, *Primulina*, and *Episcia*. Richard Craft shared a photo showing *Primulina linearicalyx* with a support ring. I know

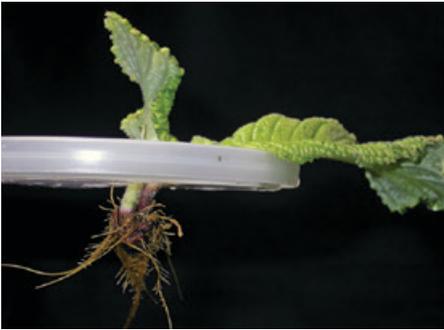


Richard and had taken a photo of his ribbon-winning *P. linearicalyx* at the 2019 Texas Lone Star Convention. He sent me photos to use for this column – the pot in the photo is five inches in diameter.

Another topic that came up was leaf propagation in wick reservoir algae water that I've been promoting for some time. I do not try to prevent algae from growing in my reservoir water because I use an extra hole in the lid to quickly grow roots on tip cuttings. That the water already has fertilizer in it I think helps promote root and continued leaf growth. Recently, one of my variegated streptocarpus hybrids created a side shoot above the soil line, so there were no roots. I cut it off the plant and plopped the base of that cutting in the extra hole. Within three weeks it had thick, healthy roots. Why don't I just put the side shoot directly into a small pot? It will collapse from wilting. Most tip cuttings from other gesneriad genera such as *Achimenes* and *Kohleria* will also wilt terribly



at first. To bypass the wilting stage, I put their tip cuttings into the extra hole of the reservoir. Leaf cuttings for propagation in soil begin their life wilted until they make roots. To avoid that stage, Janet Carlton responded in Facebook by showing how she puts algae water into small cups and uses that for leaf propagation. According to Janet, “When you plant leaf cuttings in a soil mix in an enclosed box, the leaf portions often rot before they produce any plantlets. Select healthy medium-



sized leaves for rooting in algae water in Solo cups. In the photo you can see the low water levels in the cups. When the photo was taken, they were on my dining room table. The table is a few feet from a western facing window, and so the cups got low lighting. I now have more starters,

so I’ve been keeping the cups in a larger plastic box in a south-facing window upstairs. They don’t seem to require much light at the rooting stage.” Janet only keeps the leaves in the algae water until healthy roots form. Next she takes the leaf or leaf section with healthy roots and pots that into a 3-inch pot where the leaf then produces new plantlets.



Another propagation challenge is when the tip cuttings are quite small and placed in soil. Extra humidity is needed. My photo shows cuttings of miniature *Sinningia* ‘Jung’s Plum Wine’ in two small pots. To increase humidity, I inverted a condiment-size container and placed it on the 2.5-inch pot. Notice the pot on the right has a lot of condensation. Eventually the plants need to be acclimated to room air. The pot on the left has begun to grow large enough that it has pushed against the condiment cup and that has allowed room air inside. Eventually those tip cuttings will grow tall enough to knock off their condiment cup. In the meantime that lifting of the cup allows room air to acclimate the plant gradually to room humidity. I found I can do this to plants of *Achimenes* and *Kobleria* and the weight of the condiment cups is so light that they don’t damage the tips as the tips push them higher.



Seed Fund – Hybrids

Gussie Farrice, Seed Fund Co-Chairperson ~ Staten Island, NY, USA ~
<f.farrice@verizon.net>



Hopefully this crisis will pass and we will see each other again in the near future

AS YOU ALL KNOW THIS HAS BEEN VERY HECTIC year for everyone. Due to the Covid-19 pandemic the 2020 Convention in Tampa Bay, Florida had to be canceled. The decision was made to keep all of our attendees safe but I know that all our members must have been just as disappointed as I was. Adding to my disappointment I had to cancel my annual trip to Aruba. This was very disheartening as I have been going every year for over thirty years, and my husband and I are honorary Arubans. Hopefully this crisis will pass and we will see each other again in the near future. Carolyn Ripps and I had our seed boxes ready for the convention – and they're ready for your orders! Stay well and safe!



Julie Mavity-Hudson, 2019 Seed Fund Contest Winner, in her light garden.



Leong Tuck Lock, second place winner of the 2019 Seed Fund Contest, holds his certificate. Note the eucodonia in the foreground.

Donations from the following are gratefully acknowledged: Karyn Cichocki, Bob Clark, Keith Dabney, Jill Fischer, Josh Higgins, George Kloppe, Dale Martens, Hung Nguyen, Mauro Peixoto, Maureen Pratt, Carolyn Ripps, Bonnie Russom, Fran Russom, Peter Shalit, and Gary Vellenzer.

Send orders for hybrid seed to:
Gussie Farrice, 121 Nelson Avenue, Staten Island, NY 10308

Seed Fund – Hybrids

Achimenes (D)
longiflora × 'Klaus Neubner'
hybrid mix (B,L)

Aeschynanthus (B)
"Thai Pink" × self
hybrid, large orange/red

Chrysothemis (F,LM)
• *pulchella* hybrid mix
hybrid mix

Columnnea (B)
'Jude' × self

hybrids (orange)
'Yellow Bird' × self

Drymonia
sp. aff. *ecuadorensis* × 'Francisco Pizzaro'

Episcia (H,L,B,F)
• *cupreata* hybrids × 'Suomi'
cupreata hybrids mix
cupreata yellow hybrids
hybrid mix
mixed hybrids (5 crosses)
yellow hybrids

Eucodonia (D,F,P)

- ‘Adele’ × self
verticillata ‘Cecilia’
- hybrid 1
- hybrid 3
- hybrid mix

Gesneria (H,F,L)

- citrina* hybrid × self
- ‘Flashdance’ × self
- ‘Sundrop’ seedling × self

Kobleria (D)

- ‘Brazil Gem’ × *bogotensis*
- hybrid mix

Microchirita

- caliginosa* × *sericea*
- sericea* × *caliginosa*
- viola* × *caliginosa*

Nematanthus

- ‘Cheerio’ × self

Primulina

- ‘Dreamtime’ × self (sp. “New York”
× *flavimaculata*)

Seemannia (D)

- ‘Medusa’ × self
- purpurascens* ‘Purple Prince’ × self
- syriatica* hybrid × self

Sinningia (D)

- aggregata* × *araneosa*
(*aggregata* [yellow] × *sellovii*) × self
- araneosa* hybrid (OP)
- araneosa* hybrid × self
- brasiliensis* × ‘Towering Inferno’
(*bullata* × *leucotricha*) × self
- (*calcareia* × *reitzii*) × self
- canescens* × *leucotricha* ‘Max Dekking’
- carangolensis* × *brasiliensis*
- carangolensis* × *warmingii* ‘Esmeril’
- cardinalis* × *glaziioviana*
- cardinalis* hybrids
- cardinalis* ‘Innocent’ × *iarae* (LM)
- (*cardinalis* ‘Innocent’ × *iarae*) × self
- (*cardinalis* × *iarae*) × self
- [(*cardinalis* × *leucotricha*) × *leopoldii*] × self
- cardinalis* × double orange hybrid
- (*cardinalis* ‘Skydiver’ × *iarae*) × self
- conspicua* × *cardinalis*
- eumorphia* hybrids mix (F,R)
- (*eumorphia* ‘Saltao’ × *piresiana*) × *conspicua*
- glaziioviana* × *leopoldii* F2 (LM)
- guttata* × *speciosa* ‘Cabo Frio’
(*iarae* × *cardinalis* compact) × self
- leopoldii* × *iarae*
(*leucotricha* × *bulbosa*) × self
(*leucotricha* × *cardinalis*) × *leopoldii* × self
(*leucotricha* × *cardinalis*) × self
- leucotricha* × *leopoldii*
- leucotricha* × ‘Apricot Bouquet’
- leucotricha* × *piresiana*
- sellovii* × *araneosa*
- sellovii* small pink hybrid × self
(*sellovii* × ‘Apricot Bouquet’) × self
- sellovii* × ‘Peridots Sand Pebbles’
(*sellovii* × *tubiflora*) × self

sellovii × unknown sp.

sellovii hybrid mix (OP)

(*sellovii* × *warmingii*) (OP)

(*sellovii* × *warmingii*) × *araneosa* hybrid

(*sellovii* × *warmingii*) × self

(*tubiflora* × ‘Apricot Bouquet’) × (*sellovii*
× *tubiflora*)

(*tubiflora* × *incarnata*) × self

‘Anne Crowley’ × self (F,L)

‘Apricot Bouquet’ seedling × ‘Apricot
Bouquet’ (LM)

‘Apricot Bouquet’ × self (LM)

(‘Apricot Bouquet’ × self) × self (LM)

‘Apricot Bouquet’ seedling × *conspicua*
(F,L)

‘Apricot Bouquet’ hybrids

‘Arkansas Bells’ × self

‘Beata’ × self (*leucotricha* × *leopoldii*)

‘Bewitched’ × self (F,L)

(‘Butter & Cream’ × ‘Mama Cat’) × self

‘Carolyn’ × self

‘Cherries Jubilee’ (OP)

‘Cindy-Ella’ × self

‘Claire’s Choice’ × self

‘Delta Fox’ × self (F,P)

‘Diego’ (red) (F,L)

‘Diego’ (pink)

‘Dollbaby’ × self

‘Doris’ F3 × self

• ‘Elin’ × *leucotricha*

‘Esther’ × self

‘Flamenco Apricot Bouquet’ × self

(‘Florianoapolis’ × *leopoldii*) × self

‘Fuzzy Bear’ × self

‘Georgia Peach’

‘Good Pink’ × self (F,L)

‘Gyllenblom’ × ‘Raketbarn’

• ‘Jubilee’ × self (F,L)

• ‘Krezdorn Yellow’ × self (L)

• ‘Krishna’ × self

‘Lavender Crest’ × self

‘Little Imp’ × self (F,P)

‘Maiden’s Blush’ × self (F,P)

‘Mama Cat’ × self

‘Mother of Pearl’ × self (F,P)

‘Mothers Day’ × self (F,L)

‘Ozark Pink Petunia’ × self

‘Pale Beauty’ × self (L)

‘Peridots Blazer’ × self

‘Peridots Patchwork Quilt’ × self

‘Pink Pearl’ × self

‘Premier Pink’ × self (F,P)

‘Pure Pink’ × self (F,P)

‘Raketbarn’ × self

‘Romanza’ × self

‘Roulette Cherry’ × self

• ‘Ruby Red’ × self (F,P)

‘Scarlet O’Hara’ × self

‘Scarlet Sunset’ × self (F,P)

‘Stones Yulia’ × self

‘Super Pink’ × self

‘Tampa Bay Beauty’ × self (L)

‘Towering Inferno’ × self (OP)

‘Towering Inferno’ × self

- ‘Treva McDaniel’ × self
- ‘Vevette’ × self
- ‘Winkie’ × self
- hybrid (peach) × self
- Super Mini F5
- ‘Georgia Sunset’ hybrid mix
- “Hummingbird Mix”
- miniature hybrid mix (F,P)
- miniature hybrid mix (lav/purple) (F,P)
- pink hybrid mix
- peloric hybrid mix
- peloric hybrid mix, red

***Sinningia speciosa* hybrids (F,R)**

- blue × self
- mini
 - lavender pink
 - purple red rose
 - white white × red
- pink dwarf
- purple peloric
- purple picotee
- purple × pink
- purple w/spots
- red picotee
- red w/spots
- red w/white edge
- solid dark purple
- white w/red spots
- white/lavender
- “California Minis”
- Chiltern hybrid
- blue slipper
- blue slipper × self
- ‘Avenida Niemeyer’ × *macrophylla*
- ‘Empress’ purple × self
- lavender and pink slipper × self
- lavender slipper
- pink slipper
- red slipper
- AC1503 × *speciosa* ‘Regina’
- blue mix
- orchid/purple mix
- pink mix
- pink/white mix
- pink and white slipper
- pink and white × purple
- purple × red
- red mix

- slipper mix
- Charles Lawn hybrid mix
- Jack Evans purple mix
- Red spotted × red spotted sibling
- ‘Regina’ hybrid
- ‘Regina’ × *speciosa* AC1503
- *speciosa* × *conspicua*
- Small’s dwarf mix
- white × red
- mixed hybrids

***Smithiantha* (D)**

- hybrid (white)
- ‘Jan’s Surprise’ × ‘Tropical Sunset’
- ‘Little One’ (F,L)
- ‘Sassy Redhead’ × ‘An’s Sognare Firenze’
- ‘Sassy Redhead’ × ‘Dale’s Texas Delight’
- ‘Vivian’s Gift’ × ‘Sunrise Thunder’

Streptocarpus* subg. *Streptocarpus

- ‘Amy’ × self
- ‘Bethan’ × self
- ‘Black Panther’ × self
- ‘Bristol’s Charm’ × self
- ‘Bristol’s Daisy Jane’ × self
- ‘Bristol’s Gum Drop’ × self
- ‘Bristol’s Hey Mei’ × self
- ‘Bristol’s Hot Rod’ × self
- ‘Bristol’s Ice Castle’ × self
- ‘Bristol’s Luv It’ × self
- ‘Bristol’s Popsicle’ × self
- ‘Bristol’s Ripe Melon’ × self
- ‘Canterbury Surprise’ × self (V)
- (‘Canterbury Surprise’ × ‘Bristol’s Leopard Skin’) × self
- ‘Canterbury Surprise’ × ‘Charlotte’
- ‘Canterbury Surprise’ × ‘Coral Flair’ (V)
- ‘Canterbury Surprise’ × ‘Emily’s Song’
- ‘Cape Beauties’ × self (F,P)
- (‘Cape Essence’ × ‘Iced Pink Flamingo’) × unnamed hybrid
- ‘Charlotte’ × self
- ‘Charlotte’ × ‘Northwoods Bear-ly Salmon’
- ‘Crystal Wonder’ × self
- ‘Demeter’ × self
- ‘Elegance’ × self
- ‘Ella Mae’ × self
- ‘Ella Mae’ × “Blue Variety”
- (‘Epupa Falls’ × self) × self

Seed Packets — \$3 each

- Please**
- To pay by credit card, send your credit card number, expiration date, and signature, and indicate if the card is MasterCard or Visa (\$6 minimum)
 - To pay by PayPal, contact the Seed Fund chairpersons for instructions
 - Make checks payable to The Gesneriad Society in U.S. funds
 - **Provide a self-addressed, stamped envelope** (non-U.S. orders will have the postage added to their credit card bill)
 - List alternate choices
 - Include your membership number (first number on your mailing label)
- Note**
- There is a limit of one seed packet of a single variety per order
 - There is a limit of 25 seed packets per order
 - There is a household limit of 50 seed packets per calendar year

- 'Falling Stars' × self
 'Fancy Pants' × self
 'Fernwood's Cherries Jubilee' × self
 'Fernwood's Fairy Princess' × self
 'Festival Wales' × self
 'Fleischle's Princesse' × self
 'Fleischle's Roulette Cherry' × self
 'Franken Dainty Lady' × self
 'Franken Jane Elizabeth' × self
 'Franken Stacey' × self
 'Good Vibrations' × (*primulifolius* × *rexii* selfed)
 'Hera' × self
 'Ice Berg Blues' × 'Guidelines'
 'Ice Berg Blues' × ('Canterbury Surprise' × 'Bristol's Leopard Skin')
 'Jane Elizabeth' × "Blue Variety"
 'Jenny' × self
 'Ken's Purple' × self
 'Keri's Purple' × self
 'Kim' × self
 'Kitten Face' × self
 • 'Lavender Rosette' × self
 'Midnight Flame' × self
 'Mini Pink Fu' × self
 'Northwoods Bear-ly Salmon' × self
 'Northwoods Bear-ly Salmon' × 'Iced Amethyst Showoff'
 'Northwoods Bear-ly Salmon' × 'Velma'
 Pale lilac netted × self
 'Park's Holiday Hybrid' × self
 'Party Doll' × self
 'Passion Pink' × self
 'Pegasus' × self
 'Persephone' × self
 'Piment Ornamental'
 • 'Pink Ice' × self
 • 'Polish Mini #2' × self
 'Royal' (red) × self
 'Royal' (white/pink stripes) × self
 'Sandra' × self
 'Saturn' × self
 'Scarlet Glitter' × unknown
 'Smooched' × self
 'Somerset Purple Ice' × self
 'Spooky' × self
 'Stacey' × "Blue Variety"
 'Stonewashed' × self
 'Sue mini' × self
 • 'Suzie' × self
 'Thalia' × self
 'UA-Enchanted Forest' × self
 'Velma' × self
 'Wow' × self
 (*confusus* ssp. *confusus* × *polyanthus* ssp. *verecundus*) × self
 • *johannis* × unknown
 (*polyanthus* ssp. *polyanthus* × *prolixus* JT04-11) × self
 (*primulifolius* × *rexii*) × self
 • *rexii* × *gardenii*
rexii hybrids
 • Wiesmoor hybrids
 hybrid, lt blue/dk blue lines
 • hybrid, lg purple
 hybrid, lg white
 hybrid, lg mixed colors
 hybrid, pink/pink
 hybrid, red
 hybrid, red × self
 hybrid, white/pink × self
 hybrid mix
 Dibley's Pink Bouquet Mix
 New Zealand hybrid mix
Streptocarpus* subg. *Streptocarpella* sect. other than *Saintpaulia
 hybrid, white/pink flowers
Intergenerics
 • *Paliavana prasinata* × *Sinningia gerdtiana*
Paliavana prasinata × *Sinningia macropoda* MP 944
Paliavana prasinata × *Sinningia reitzii* MP 949
 • × *Gloximannia* 'Circe' × self
Mixed gesneriad hybrids
 • denotes LIMITED quantities

Seed Fund Key

- | | |
|--|---|
| <p>(A) Alpine or cool greenhouse</p> <p>(AN) Annual, dies after flowering</p> <p>(B) Suitable for hanging basket</p> <p>(D) Has dormant period, forming tubers or rhizomes</p> <p>(F) Blooms readily in fluorescent light</p> <p>(G) Recommended for greenhouses; requires space</p> <p>(H) Requires humidity and warmth</p> <p>(L) Low growing; not more than 12"</p> | <p>(LM) Low to medium height</p> <p>(M) Medium height; 1 to 2 feet</p> <p>(MT) Medium to tall</p> <p>(OP) Open pollinated</p> <p>(P) Petite or miniature; under 6"</p> <p>(R) Rosette in form</p> <p>(S) Requires sun to bloom</p> <p>(T) Tall plants; generally over 3 feet</p> <p>(U) Unifoliate or single leaf</p> <p>(V) Leaves may be variegated</p> |
|--|---|

The Gesneriad Society, Inc.

A non-profit membership corporation chartered by the State of Missouri

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Go to www.gesneriads.org for complete chapter meeting information.*

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<jill.g.fischer2@gmail.com>

Gesneriad Hybridizers Association — *CrossWords*, 3 issues, \$8 (\$9 outside USA). Send to Martha Lacy, 260 Stoddards Wharf Rd., Gales Ferry, CT 06335 USA <Martha_GHA@comcast.net>

“Cleanings” — a free monthly newsletter from The Gesneriad Society (Mel Grice, editor). To subscribe, go to <http://www.gesneriads.org/cleanings/index.htm> and click on “Subscribe to Notification email.”

Gesneriphiles Internet Discussion Group — Visit the website for instructions about joining the list:
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for more about websites, organizations, and Facebook pages devoted to gesneriads.

Visit <http://www.gesneriads.info/>
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