

NEWSLETTER



SOS Executive

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Editor's Note: The newsletter is distributed electronically (blind copied so addresses remain private) to all members for whom we have an email address. If you do not receive an emailed newsletter please email info@saskorchids.com to update your contact information.

Future Meeting Dates:

Sat Feb 26, 2022	Sat Apr 23, 2022
Sun Mar 27, 2022	Sun May 15, 2022

facebook: [https://
www.facebook.com/saskorchidsociety?](https://www.facebook.com/saskorchidsociety?)
Mail Address: SOS, Box 411, Saskatoon,
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The February general meeting will be held on **Saturday, Feb. 26 @ 1:00 pm CST**

The guest speaker is Sarah Hurdel, presenting "Habenarias".

The presentation will start at 2:00pm using the same zoom link. The Manitoba Orchid Society and the Orchid Society of Alberta will be joining us at 2pm to take in Sarah's presentation.

Please see page 2 of this newsletter for link to the Zoom meeting.

ANNOUNCEMENTS

ZOOM GENERAL MEETINGS TO CONTINUE

Due to recent surges in the omicron variant, we will continue meeting virtually for the time being. We will reevaluate as 2022 proceeds.

GENERAL MEETING AGENDA:

1:00pm SOS Business:

Announcements
Problem corner
Show & Tell

2:00pm Guest Speaker Presentation

GUEST SPEAKER:

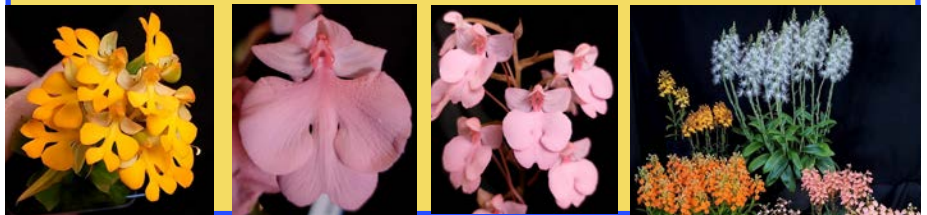
Sarah Hurdle, *Something About Orchids*



Presentation: *Habenarias - Best in Show!*

Learn about these often misunderstood, yet surprisingly easy to grow terrestrial orchids. An introduction to *Habenaria* species, hybrids, and expert advice on how to grow them. Greenhouse not required!

Sarah is a grower, exhibitor, and accredited AOS Judge. She currently maintains a collection of over 600 orchids under lights in her basement and has received AOS award recognitions for culture, flower quality, and exhibit design. Her presentations combine her love of orchids, photography, and illustration with experienced advice and a sense of humour. She also has a Facebook Blog Page, *Something About Orchids*: [facebook.com/askmeaboutmyplants](https://www.facebook.com/askmeaboutmyplants)



Saturday, February 26, 2022 @ 1:00 PM CST

Please join the Zoom SOS general meeting starting at 1:00pm by clicking on this link:

<https://usask-ca.zoom.us/j/99673552413?pwd=M3VTcHpRWm9WZm9ndEJzRnZxYzFGUT09>

Stay on this same meeting link for the presentation beginning at 2:00pm.

GARDENSCAPE

The results of the poll sent to the SOS membership were: 78% against participating, 15% in favour of participating, and 8% abstained. Based on this we will not be entering a display at Gardenscape this year. Thank you to those who took part in the poll. We usually hold our March General Meeting the weekend before Gardenscape to accommodate volunteers looking after our plant display, so since we will not be participating in Gardenscape, our March General Meeting will be held Sunday, March 27th. Time is yet to be determined.

SOS EMAIL CONTACTS

Plant orders go to: orders@saskorchids.com

General requests or queries to:
info@saskorchids.com

LIBRARY

If you would like to borrow any library resources, or if you have any library material that needs to be returned, please email Librarian Deb Huculiak hucuh@sasktel.net to arrange for pickup. Please include in your email message your name and a phone number for Deb to reach you. You can find a .pdf of the library holdings on our SOS website. Available are books, magazines (AOS Orchids and Orchid Digest), pH meter, light meter.



Aerangis luteoalba var. *rhodosticta*

Photo: <https://www.ecuagenera.com/Aerangis-luteoalba-var-rhodosticta/en>

Ecuagenera orders were due Feb 14. The plants will be delivered to the Foothills Orchid Society Show in May, picked up and brought to Saskatoon and distributed by Heather and David. More details to come.

Heather and David will be placing a pre-order to **Ten Shin Orchids**, for pick up at the Calgary Show the end of May. Lists will be emailed to you in the next week, with the order to commence on February 21 and a deadline of noon on March 7. Once again, email your orders and/or questions to David or Heather at orders@saskorchids.com

JANUARY GENERAL MEETING MINUTES

Date: January 22, 2022 1:00 pm CST

Location: Zoom meeting, moderated by Calvin Lo.

The first portion of the meeting was chaired by Tracey Thue and was restricted to members of the Saskatchewan Orchid Society. There were at least 18 participants.

Announcements:

- We are continuing with Zoom meetings for now. The executive is assessing the situation from month to month.
- Our guest speaker today will be Kelly McCracken from High Country Orchids, presenting on the Zoom link at 2:00 pm, to be shared with the Orchid Society of Alberta and the Manitoba Orchid Society. Her topic will be "Fragrant Miniature Orchids."
- Gardenscape will be going ahead this year and will be held on March 25, 26, 27. Traditionally, we have had a display there, with at least two people manning the display for two-hour shifts throughout the three days. The executive wants to get a feel for whether the membership would like us to put in a display and whether we would have enough people to man the display over the three days. Calvin has put together a poll, which will be distributed by email so we can get a sense of how people are feeling about it. It is hard to predict what this pandemic will look like by the end of

JANUARY GENERAL MEETING MINUTES

March, but we don't want to commit to a display if there are not enough people to man it. So watch your inbox for the poll in the next few days.

What is involved in having a booth: the Society registers with Gardenscape to have a booth. The Society has various materials for a display, and volunteers assemble the display on Thursday before the show starts. Late Thursday afternoon and early evening, Society members bring flowering orchids to Prairie Land to go in the display. Then for Friday, Saturday and Sunday we have two volunteers at a time, manning the booth while the show is on. These volunteers work in two-hour shifts. They monitor the display and engage with the public, answering questions that members of the public might have about growing orchids, such as where to buy orchids, how to get a plant to re-flower, etc. This is also a good opportunity to get new members, so we have a sign-up sheet at the display where people can leave their names and email addresses, and we contact those people later and invite them to join the Society. Then, on Sunday, when the show is over, people come and pick up their orchids, and the display is taken down and put back in storage.

Volunteers get a free pass to Gardenscape.

We would need a minimum of 26 volunteers to run the display for the three days, plus people to set up and take down the display. There is a considerable amount of work, but it is a productive and rewarding time. But given the pandemic and the fact that our volunteers will be exposed to a certain amount of risk, we want to know whether people feel that we should have a display, even if Gardenscape goes ahead.

Tracey said that she, herself, would not volunteer; she feels there is too much risk in the present environment.

It is not known what the entrance screening protocol for Gardenscape will be although, at the present time, everyone who enters the exhibition premises has to be vaccinated, so probably everyone going to Gardenscape would have to be vaccinated. Perhaps the booth could be set up so there are six feet between volunteers and visitors. The limiting factor would be getting 26 volunteers; we don't want people to feel pressured to volunteer. Public health recommendations right now are that we forego nonessential activities and that we avoid crowded situations.

We are asking people's opinions with our survey.

Apparently, last year they did a virtual Gardenscape. If they end up doing that again this year, we could revisit our decision to participate.

Comments from the Executive:

- Calvin commended Heather on her efforts in finding and organizing these awesome speakers and coordinating them with the other societies. These virtual meetings have opened up the possibility of finding excellent speakers that we would not usually have access to. Others agreed. Heather said today's session will cost us

about \$65. Speakers charge between \$100 and \$250, and when it is shared with other societies, the cost is quite reasonable. Also, we don't have the travel and other expenses associated with a speaker coming in person. However, we are missing the meetings and camaraderie, and seeing everyone in person.

- Tracey Thue reported that when the Foothills Orchid Society goes to their first face-to-face meeting, they plan to offer a Zoom component, and we might want to do something like that. Heather said they are having a speaker coordinator's meeting in early February, and the FOS will have had their first in-person meeting by then, so they will be able to find out how that went.

Problem Corner:

Q. A member bought some half-price orchids that had been touched by frost. One Phalaenopsis has lost its crown leaf. Will it grow? She had another Phalaenopsis that had lost its crown leaf due to scale, and it produced a keiki from the stem underneath.

A. Tracey Thue replied that Phalaenopsis grow from the crown so if you have lost the crown leaf, it is probably a death sentence for that plant. You can be patient and see if it will keiki, but it will not grow from the crown.

Q. A member wants to set up a terrarium in which to grow orchids. She wants to know what orchids will grow best in it. She has ordered some plants recently, so Heather would have a list of what she ordered.

Ans. Heather replied that David Schwinghamer is very knowledgeable about growing plants in a terrarium. Heather will go through the list of what the member ordered and pick out those plants that she thinks would do best in a terrarium. Then she will get David to contact the member.

Q. A member has a Paphiopedilum Gloria Naugle which is a primary cross between Paph. rothschildianum and Paph. micranthum. It is presently potted in coarse bark, which is probably too dry a medium because he only waters about once a week. He is looking for some growing tips.

A. Tracey replied that they seem to like Orchidata bark. She uses the medium size Orchidata, or the fine size if the plant is a seedling or very small. She generally grows them on an east-facing windowsill and then, if they are a Chinese species (e.g., *Paph. micranthum*) or hybrid of a Chinese species, she puts them outside for the summer. They really seem to like the drop in temperature. That is a tough cross because *Paph. rothschildianum* doesn't grow

GENERAL MEETING MINUTES, CONT.

at all like the Chinese species. *Rothschildianum* likes bright light and warmer temperatures, but *micranthum* likes a cooler temperature in winter. Tracey puts her Chinese species and hybrids in a shaded, cooler spot, and waters them about every 2-4 weeks, depending on pot size. They go bone dry between waterings and then she takes them to the sink and flushes thoroughly with water. However, Gloria Naugle would not be happy with that, so Tracey recommends cutting the watering to perhaps once every week or two.

The member thought perhaps his plant needed a smaller pot after looking at the pots that Tracey's Paphs are growing in.

Do the Paphs go through a seasonal rest?

The *rothschildianums* do not but the Chinese species do. It really depends on the characteristics it inherited from each parent. You will have to live with it for awhile and figure out what it will take. Both species are slow growing, especially *rothschildianum*. Her Chinese species only bloom once every two or three years, but it depends on the plant.

Show and Tell:

Jenn Burgess showed:

- ***Brassocattleya* Maikai 'Mayuni'** which she got from Heather and which she grows on the windowsill and under two T5 lights.
- ***Oncidium* Twinkle 'Yellow Bird'** for Forestview
- ***Brassolaelia* Yellow Bird** which has five spikes and which she also grows on the windowsill and under lights. She has been told that anything with Richard Mueller in it is a good plant, and this *Bl.* is a Richard Mueller cross.

Lynn Campbell showed a ***Dendrobium* Stardust** which hangs in her kitchen window. She has had it for a lot of years. She grows it in bark and waters it once a week. She doesn't give it a winter rest. Calvin says it is a *Dendrobium unicum* crossed with something that doesn't need as dry a rest.

Calvin Lo showed:

- ***Dendrobium scabrilingue*** - a black-haired species, fragrant during the day; small, very floriferous. It is prone to over-watering in the winter; he waters when the canes start showing signs of shrivelling.
- ***Angraecum didieri*** - probably the easiest *Angraecum* to grow.
- ***Dendrobium* White Grace 'Sato'** - a hybrid containing *Den. speciosum* (an Australian species from the Latouria Group) and *Den. bigibbum* (a tropical species from the Phalaenathe Group). The Latouria group grow more like *Cattleyas* with leathery leaves and canes

that are almost like pseudobulbs, and they need a winter rest and bright light. The Phalaenathe group have the more familiar longer canes. White Grace is an inter-sectional hybrid and exhibits characteristics of both parents. He grew it outside under shade cloth in the summer and on a windowsill in winter.

Tracey Thue showed:

- ***Paphiopedilum* Wonderfully Wood** - from Paph Paradise
- ***Paphiopedilum* Snow Castle** (Ice Castle x Emerald Lake) - a complex Paph with faint lime colour, also from Paph Paradise
- ***Paphiopedilum* Fairly Galaxy** (*Paph. fairrieianum* 'Matrix' x *Paph. Icy Galaxy* - from Orchid Inn. She loves the *fairrieianums* but she finds them challenging: they flower and then they try to die. However, Dave Sorokowski of Paph Paradise recommended not giving *fairrieianums* a dry period, rather letting them get almost to dryness and then flushing them. Tracey has been trying this and they seem to be doing better.

Tom Kondra showed a ***Dendrobium* Microchip x *Dendrobium* normanbyense**. He grows it totally opposite to what he has heard you need to do with *Dendrobiums*, e.g., he waters it every second day. It produces flowers every couple of months, and it now has about thirty buds. Calvin Lo explained the *Dendrobium* is the second largest genus in all of Orchidaceae and can be found from the 2000 foot elevations of the Himalayas where they get snowed on, down to the steamy tropics of Indonesia. So generalizations about their care should not be made. *Den. normanbyense* comes from Normandy Island, off Papua New Guinea, where the temperature never fall below 18C in winter, and which has consistent rainfall. This is probably why Tom's plant is doing so well under his regimen.

Tobi Fenton showed an ***Epidendrum* polybulbon 'Golden Gate'**, which she grows mounted under lights in a terrarium. She mists it well every day with rainwater. It is putting out masses of roots and keeps producing flower buds. She got it recently from Gold Country Orchids.

At 2:00 p.m., the Orchid Society of Alberta and Manitoba Orchid Society joined the meeting for the guest speaker presentation. There were at least 51 participants.

Tracey Thue welcomed the members of all three societies. She also welcomed the speaker, Kelly McCracken and thanked her for allowing us to record her presentation.

GENERAL MEETING MINUTES, CONT.

Presentation:

Kelly McCracken, High Desert Orchids (kelly@highdesertorchids.com) speaking on the topic, Fragrant Miniature Orchids

This is Kelly's first international talk and her first time giving this talk on fragrant miniatures. She has never been to Canada but hopes we will invite her back next year. High Desert Orchids specializes in miniature orchids and many of her customers are looking for fragrance. She can be contacted by email at kelly@highdesertorchids.com or on Instagram at @hdorchids. She is not able to ship to Canada at the present time. Her business started about four years ago in a little 8 x 10 greenhouse in her backyard. Before that she was growing plants in a plastic covered baker's rack, about 4' x 2' x 6' tall. They grew very tiny plants in this "greenhouse". The new greenhouse quickly became overrun with a lot of plants, so then she started buying smaller plants. Her philosophy is that everyone has room for a miniature; everyone has room for a plant in a one-inch pot, so that is the niche that they cater to at High Desert Orchids. They have since expanded from that initial greenhouse to about 2500 sq. ft. of commercial warehouse space. They grow all under artificial lights. They still specialize in miniatures, but have expanded their varieties of plants to include jewel orchids and smaller Hoyas. Her talk will include mainly species 6" and under. There are not a lot of miniature hybrids on the market. She will talk about what they smell like (but nothing too stinky) and their culture.

Orchid Species

Miniatures are tough to give cultural advice about as a group. There is no general rule for growing them; each genus and species has its own culture. You need to understand the specific cultural needs of that species: where it grows and what it needs. orchidspecies.com is an excellent resource for learning about your orchids. It is one of the most comprehensive free online guides for orchid species. If you enter the binomial name of your species, you will see a picture of that species and information on growing requirements such as light, temperature, blooming habits, altitude where it is found in nature. You can also search by section. Taking care of species is all about knowing your environment, and then buying species that will thrive in that environment. You need to know exact details about your environment. For example, it is not enough to say that you

have an eastern window; you need more details., e.g., does the sunlight hit the window at noon or is there an overhang?

Temperature

- You need a drop of 10-15F from day to night.
- Cool: 45F (winter nighttime low) - 75F (summer daytime high)
- Intermediate: 55F - 85F
- Warm: 65F - 95F

Kelly's greenhouses are intermediate - the heaters kick in when the temperature hits 55F in winter, and the maximum daytime temperature in winter is about 70F, so they get that 10-15F drop. This can be challenging if you are growing plants in your home because a 10-15F drop is not comfortable for most people. You will need to find a way to make the growing area warmer during the day or cooler at night. You may need to use an unheated garage or a cool bathroom to get that temperature drop.

Kelly recommends buying a hygrometer/thermometer. The one she showed is an Acu-rite, which you can get from Amazon for about \$10. It shows temperature and relative humidity and gives the maximums and minimums for the previous 24 hours. It will improve your orchid growing remarkably.

Light

(Recommended artificial light values are in brackets.)

- Shady (low): (40-60 umol/m²/s) *Paphs*, *Phals*, jewel orchids
- Medium (100-150 umol/m²/s) *Paphs*, *Phrags*, *Oncidium*
- Bright (high) (200-250 umol/m²/s) *Cattleya*, *Brassavola*, rupicolous (growing on rock) *Laelia*

There is more detailed information on light requirements on Kelly's website, highdesertorchids.com

Humidity

Be aware of the tolerance of your plants for your humidity conditions. You cannot grow an Andean cloud forest species on a New Mexican windowsill! On the other hand, *Cattleya* and their hybrids tend to do quite well in the lower humidity since they like to dry out. You need to be aware of your species and where it is growing: is it growing in cloud forest or in dryer forests? Is it growing on rocky cliff faces where it is always foggy, or is it growing by a beach where it is much dryer?

GENERAL MEETING MINUTES, CONT.

Species

Dendrobium aberrans: a good beginner species

- Smallest member of the Latouria section, all from Papua New Guinea
- Very easy to bloom and the flowers last 3-4 months
- Good quality water is very important (RO or distilled), low fertilizer (1/4 strength every watering)
- Warm to cool growing
- Shade to bright light
- Don't need a dormancy
- Smells like cinnamon

It has a lot of hybrids and they all smell like cinnamon. Examples: Aussie's Chip, Micro Chip, Nano Chip, Chocolate Chip, Taro Chip. They are also easy to grow.

Dendrobium eriiflorum:

- Stachyobium section, which is comprised of 12-15 species, mostly from Thailand, some from Vietnam, India
- This one has a wide distribution, from Assam India to Malaysia, which means that it is tolerant of a wide range of growing conditions
- Fast-growing, produces a new growth in the summer and then it flowers off that new growth
- Needs humidity and lots of water while growing
- Deciduous, loses leaves after flowering, so reduce water over winter
- Super fragrant, smells like honeysuckle

Dendrobium kanburiense:

- Stachyobium
- From Thailand
- Temperature tolerant - intermediate to hot
- Drier winter
- Bright green flowers, plant is about 2" tall
- Deciduous - growth habit similar to *Den. eriiflorum*
- Smells like lemon olive oil

Dendrobium langbianense:

- New species in the Stachyobium section
- Thailand and Vietnam
- Deciduous, 5-6" tall
- Easy to grow, medium light, drier winter
- Flowers are a lovely purple, long lasting
- Smells like a hospital soap

Dendrobium moniliforme:

- From the Dendrobium section
- Easy growing, grows like a Nobile Dendrobium
- Lots of water in summer; cooler, drier winter
- Grow buds from the second year canes, not the new canes
- You have to get them below 60F for about a month to get them to flower
- So many cultivars! A lot of the plants have variegated leaves, and there are many different variegations
- If you are growing it for the foliage, grow the plants above 62F in winter and they will not lose their leaves
- Smells like honeysuckle, although not particularly strong

Dendrobium huoshanense:

- Also in the Dendrobium section
- From mountainous region of China

- Related to *Den. officinale*, but smaller
- Used as a medicinal plant
- Grows like a Nobile Dendrobium: cool, dry winter and hot, humid summer; medium to bright light
- Very strong honeysuckle-rose fragrance
- TINY 1" plants, but the flowers are the size of a thumbnail

Dendrobium pachyphyllum:

- India, Thailand, Myanmar, all the way to the Philippines - widely distributed so fairly easy to grow
- About 1" tall; larger cultivars up to 3" tall
- Kelly grows it mounted but could be in a pot. Has a sprawling growth habit
- Warm to cool growing
- Quickly becomes a "large" specimen
- Highly fragrant - orange blossom/honeysuckle
- Flowers last about 36 hours but blooms 6 times a year. It seems to flower about a week after a cold snap.
- No dormancy. Kelly hangs it off the pot of a bright-light *Cattleya* and waters it when the *Cattleya* gets watered
- There is a form that has striped red flowers

Dendrobium thailandicum:

- Thailand
- Warm to intermediate
- Looks just like *Den. pachyphyllum* but a quarter of the size!
- Likes very bright light; won't bloom if it doesn't get bright light
- Very fast growing
- Flowers like *pachyphyllum*, about a week after a cold snap
- Same citrusy honeysuckle fragrance although not as strong

Dendrobium parishii:

- Wide distribution across SE Asia
- A bit tricky to grow because it likes a profound two-month dormancy. Likes to be very dry for two months in winter
- Deciduous. Grows thick sausage-looking canes in the summer and then loses its leaves in the fall. Then you don't water it again until you see new growth starting, kind of like a *Catasetum*
- Flowers up and down the canes so, the longer the cane, the more flowers, but the short stubby ones are cuter
- Temperature tolerant, can take 10-37C; bright light
- Likes a lot of moisture in summer, almost none in winter
- Smells like raspberry candy

Now on to *Angraecum*. *Angraecums* in general like consistent culture. They don't like to be too dry or too wet, and they don't like big humidity swings.

Angraecum didieri:

- Madagascar
- One of the easier to grow and widely available *Angraecums*
- Big flowers (3-4") on little plants (4") but can get quite tall and unruly
- Trick to growing them is to keep the roots open in the humid air, and use good quality water. A friend of Kelly's grows his in a mason jar. He puts the root portion in the jar and they grow around the inside of the jar. He fills up the jar with distilled or RO water and lets it soak for 15 minutes, until the roots absorb all the water they want, turning green. Then he empties out the jar and puts the plant back on the shelf until the roots turn silver again. Then he'll water it again.
- Fast growing; warm to intermediate temperatures; medium light or brighter
- Fragrant and sparkly
- Tend to die suddenly, usually caused by old, dense media. The jar avoids that problem
- Has a jasmine scent at night - moth pollinated

GENERAL MEETING MINUTES, CONT.

Angraecum mahavavense:

- Madagascar
- Nice, well-behaved plant, not too spindly, ~3" tall
- Humid, intermediate, shady
- Can flower several times a year, usually in summer
- Fragrant like orange blossom during the day. (Most *Angraecums* are fragrant at night because they are pollinated by night-flying moths.)

Angraecum distichum:

- Central Africa
- Easy growing, flowers often
- Non-resupinate: flowers are upside down, with the lip at the top
- Leaves are in "braids" about 1 cm across and 6 cm long
- Cool to warm, fairly bright; high humidity, but Kelly lets the media get quite dry
- Don't like to be repotted
- Likes air movement
- RO water better than tap water
- Fragrant, like cotton candy!

Aerangis monantha:

- Endemic to Madagascar
- Size of a quarter but flowers are 2-3" across with a 4" nectary (spur)
- Intermediate temperature
- Shady, mounted, humid
- Let dry between watering
- Finicky plant but amazing
- Fragrant like jasmine and orange blossom at night
- Similar to *Aerangis punctata* but *punctata* is a slightly larger plant with variegated foliage and slightly smaller flowers, and no scent at all!

Microsaccus griffithii:

- Looks like *Angraecum distichum*, also has braided (distichous) leaves, but is not an *Angraecum*
- SE Asia
- Warm temperature, shade, let dry between watering
- Plant is about 2" high, flowers a few mm across
- Flowers always come in pairs
- Most *Microsaccus* are fragrant
- Smells strongly of jasmine and fruit

Now some fragrant Pleurothallids. They need high humidity, about 85%. In New Mexico, the ambient humidity is about 15%, so you can't grow these without added humidity.

Masdevallia strobilii:

- Warm growing. (Be careful to buy only warm growing plants if you are growing them in your home; household temperatures are warm)
- Suitable for an indoor terrarium
- Shady grower; keep moist
- Tiny clear glandular hairs inside the sepals, probably to trap pollinators
- Easy, just needs that humidity
- We recommend *Masdevallias* in crushed tree fern mixed with Perlite (fairly acidic)
- Highly fragrant, like cream soda

Masdevallia glandulosa:

- Ecuador
- Has pink glandular hairs
- Cool/intermediate
- We grow it in tree fern, it does OK in intermediate
- High humidity, good quality water, shady

- Fragrant, like cloves

Masd. 'Confetti' (*Masd. strobilii* x *Masd. glandulosa*) also has pink glandular hairs and smells like root beer. It will do fine in intermediate conditions. You can get it from Ecuagenera.

No more Pleurothallids!

Capanemia micromera:

- Brazil
- Tiny, 1/2" tall plant
- Grows well among *Cattleya*, if a bit shadier
- Bright shade, intermediate/warm; water when dry
- Very fragrant, like sweet jasmine
- All *Capanemias* are fragrant

Capanemia uglinosasuperflua:

- Brazil
- Much bigger than *Cap. micromera*, about 6" tall
- Flowers are bigger than *Cap. micromera*, a bit pink, crystalline
- Doesn't like to dry out - Kelly grows them potted in fine bark
- Bright light, Intermediate temperature
- Shy bloomer
- Smells fruity, like lemons and flowers

Triglotis pusilla:

- Java and Sumatra
- Twig epiphyte, grows at edges of trees
- About 5" tall, flowers about the size of a thumbnail
- Grows like a *Vanda*
- Bright light, water well when just dry
- Flowers in late winter/early spring
- Smells like a vanilla candle but some think it smells like cherries

Neofinetia falcata:

- Japan, Korea
- Temperature-tolerant, can even take a light frost
- Bright to medium light
- Lots of water in summer, less in winter
- Lots of different cultivars; variety of foliage types, flower shapes, colours and scents
- Blooms in summer
- Tropical-smelling, pineapple, banana, coconut mango, shampoo
- Avoid Amami island cultivars; they are big plants (10")

There are not too many fragrant miniature *Cattleyas*; however, there are a couple of rupicolous *Laelias* that are fragrant. Both smell like black pepper.

Laelia ghillanyi:

- Brazil
- Rupicolous *Laelia* (now officially *Cattleya*)
- About 4" tall with 4-6" flower spike
- Intermediate/cool, but won't flower if too warm
- Bright light
- Lots of water in summer, less in winter. Kelly gets rot issues if she waters them too much in winter
- Comes in several colours
- Savoury fragrance, like black pepper

Laelia longipes/lucasiana:

- Brazil
- Rupicolous *Laelia* (now officially *Cattleya*)
- About 4" tall, 4-6" flower spike
- Intermediate/cool - a little more warmth tolerant than *L. ghillanyi*
- Bright light; lots of water in summer, less in winter
- Savoury fragrance, like black pepper

GENERAL MEETING MINUTES, CONT.

Its hybrids are also fragrant like pepper

- *Sophranitis acuenensis* x *Laelia longipes*: usually *Sophranitis* “steals” the fragrance from its crosses. This is the only primary *Sophranitis* hybrid Kelly has come across that has retained its fragrance.
- Cattlianthe Porcia x *Laelia longipes* (Lc. Tiny Treasure)
- *Laelia longipes* x *Sophranitis Beaufort*

Haraella retrocalla:

- Native to Taiwan
- Warm grower, tolerates cool conditions
- Great for growing indoors, grows like a *Phalaenopsis*. Doesn't like big temperature swings
- Likes it damp, humid, shady - must not get really dry
- Enjoys dying precipitously
- About 2-3" tall, like a miniature *Phalaenopsis*
- Fragrant like lemons (or Mr. Clean!)

It also has a pelvic form with a third petal instead of a lip; it still has the lemony scent

Pteroceras semiteretifolium:

- semiteretifolium means “almost needle-like leaves”
- Vietnam
- Warm to cool
- Flowers only once a year for Kelly; flowers for about 4 weeks
- Grow mounted, water when dry
- Bright light
- Grow it like a *Vanda*
- About 2" across
- Smells like lemon candy

Phalaenopsis thaianum:

- Thailand
- Hot to intermediate
- Likes a winter rest, very little water in the winter
- Bright shade
- About 4" across
- Smells like lemons, very fragrant

There are very few fragrant Phals.

Dendrochilum parvulum:

- Endemic to the Philippines
- Cool to warm, very tolerant
- Keep moist; shady, humid
- Pretty easy grower, very floriferous; flowers in winter
- Smells like vanilla ice cream
- You can get it from Andy's Orchids

Bulbophyllum tingabarinum:

- Vietnam
- Very easy
- 2" tall plant, 3" flowers
- Warm to intermediate; medium light
- Always a tad moist but not super wet. *Bulbophyllums* are “lazy drinkers” so Kelly grows them in a dish of water
- Smells like cilantro

Bulbophyllum ambrosia:

- Southern China and Vietnam
- Very temperature tolerant, preferring warm
- Shy bloomer - doesn't flower too often, probably happier in warm temperature

- Likes to stay somewhat moist
- Medium to shady light
- Grows best mounted. It has a bulb and then a 2" rhizome, and then another bulb and so on, so it tends to sprawl. Kelly grows them on a totem and they grow 360 degrees around the totem. Tricky to keep them moist.
- Smells like honey and roses -wonderful fragrance!

Macodes sandieriana:

- Sumatra and Papua New Guinea
- Terrestrial jewel orchid - beautiful “electric” leaf veins, undulating leaf edges
- Hot to warm, ok intermediate
- Don't need a nighttime temperature drop; will grow well in a terrarium in the house
- High humidity, lower water
- Flowers smell like toast

Pests

You need to adjust your treatment protocol depending on what pests you have: you can't treat minis all the same. The most prevalent pests are mealybugs and aphids, but Kelly has also had boisduval scale (on Cattleyas), soft scale, spider mites, and false mites on the thin leaved plants.

You can kill them with NEEM, isopropyl alcohol, or Bayer 3-in-1 (imidacloprid). Research your pests to find out which insecticide

would be most appropriate for your particular pest. Most importantly, rotate your insecticides. The pests will get tolerant of your pesticide if you use the same one all the time. Kelly likes to rotate with imidacloprid one week, and then a shot of NEEM the next.

Good humidity and good quality plants will reduce your bug problems. A plant that has been properly chosen for your environment will have fewer problems with pests.

End of presentation. Calvin thanked Kelly for her awesome presentation.

Kelly then took questions from meeting participants.

Q. One meeting participant grows primarily mounted Angraecoid species and for years has struggled with under fertilizing and then overfertilizing. There seems to be a lot of conflicting advice about it. He is wondering about her fertilizing regimen.

A. Kelly recommends low but constant fertilizing. She uses 1/4 strength MSU (Michigan State University) fertilizer with every watering. She uses RO water and tries to keep total dissolved solids (TDS) under 100ppm. She doesn't have a fertilizer injector, she just mixes the fertilizer solution every time she waters. She uses about 1/4 tsp. per gallon.

Q. He grows *Aerangis mnantha*, *Aerangis fuscata*, and *Angraecum mahavavense*, but he hasn't been able to flower them regularly. He is wondering what winter temperatures, winter watering practices, and winter light levels she uses for those species.

A. These species all grow about the same. She grows them in a quite shady area in the coolest part of her greenhouse. In winter, it would be about 55F. She waters quite a bit less in winter. Actually, she waters everything less in winter because plants don't dry out as quickly as they do in summer. She uses a PAR light level of 80-100 umol/m2. (PAR stands for photosynthetically active radiation, which is the light in the wavelength range of 400-700nm.) She doesn't adjust the pH; instead she uses acidic media. She titrates the nitrogen levels to be 80-100 ppm, which works out to be about 1/4 strength.

Q. Where do you get your plants?

A. Malaysia, Thailand, Peru, Ecuador. Her business is bringing in all these plants and then curating them for the home environment. She does not yet ship to Canada.

Q. Does the *Laelia longipes* always stay small?

A. Yes.

Q. Are you an orchid judge? (The meeting participant is a judge in Edmonton and said sometimes it is easier to fly judges in.)

A. No.

Several meeting participants thanked Kelly for her great presentation.

Meeting Adjournment: 3:16 p.m.

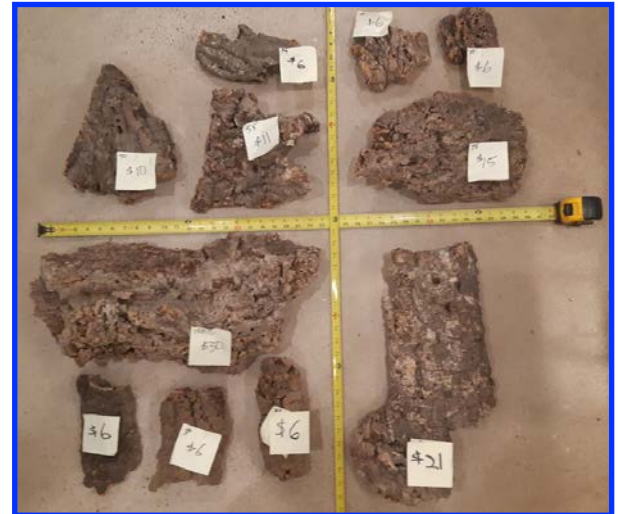
ORCHID MARKET

Plant Products from Sherida Gregoire's Greenhouse

If you are interested, please email Bob Lucas at
robert.lucas@usask.ca

Products are offered on a first-come, first-served basis.

- One Sunblaster 24" T5 HO bulb and ballast, new in the box @ \$25.00.
- Greenearth concentrate horticultural oil, 500ml, new & unopened, 2 @ \$5.00 each.



Don Keith will provide orchid supplies to SOS members,
orders to be placed by 8:00 pm Saturday, Feb. 26, 2022. Orders will be ready for **pick up after 10:00 a.m. Sunday, Feb. 27, 2022.** Please pay with exact cash, by cheque made out to the SOS, or pay Don by e-transfer. Email Don at donkeith@sasktel.net

ITEM	DESCRIPTION	PRICE	ITEM	DESCRIPTION	PRICE
Fir Bark	3L bag fine or medium (please specify)	\$6.00	Cork slabs	Various shapes, sizes (see photo above)	\$6 - \$32.00
Orchiata Pine Bark	3L bag fine, medium or med-coarse (specify)	\$6.00	Inflorescence clips	Small, brown or green	10 for \$1.00
Orchiata Pine Bark	40L bag, fine, medium or med-coarse (specify)	\$52.00	Rhizome clips	Small Med/Large	\$1.00 \$1.25
Perlite	4L bag medium/coarse	\$4.00	Clear Pots	2 1/4 x 2 1/4 square	\$0.50
GrowStones	3L bag, 1/4 - 3/8" or 1/2 - 3/4"	\$6.00		2 1/2 x 2 1/2 round	\$0.50
Sphagnum moss, N.Z.	8L compacted 12L compressed	\$12.00 N/A		2 3/4 x 2 3/4 round	\$0.75
Grodan Grow Cubes	3L bag, 0.4" cubes 7L bag 0.4" cubes	\$5.00 \$10.00		4 x 4	\$1.25
MSU fertilizer	1 cup 13-3-15 for tap or RO water	\$5.00		4 1/2 x 4 1/2 slotted	\$1.50
Oyster shells	1 cup bag	\$0.25	Net Pots	3"	\$1.25
Marphyl Soil Enhancer	500 ml bottle	\$11.00		3.5"	\$1.25
				5"	\$1.50
				6"	\$1.75

SHOW AND TELL

Grown by Lynn Campbell

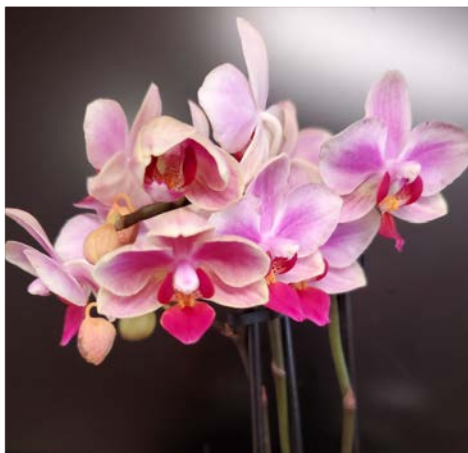
Phalaenopsis Lowland Jewel

This is my oldest *Phalaenopsis*. It has bloomed for years in January but missed 2021 for reasons unknown. Very pretty and different.



Phalaenopsis philippinensis

I believe this is a species. It hasn't bloomed since January, 2018. Until then, it was a faithful bloomer in January with lots of blooms. Well, it only has four blooms now but they are lovely. Unfortunately, hard to photograph. The dogs chewed the label many years ago, so hard to read! The name is 'philippinensis.' The other side of the label, what I can read, looks intriguing.



Dendrobium Stardust

Outdoing itself this year. There are a lot more blooms to open. I have had this many, many years! It hangs in an east window in the kitchen.



Dendrobium NOID

This is a miniature that I bought at Home Depot. Three stems! I never buy plants at box stores but couldn't resist; so cute, and lovely colours!

Grown by Calvin Lo



Angraecum sesquipedale* aff. *bosserii

A first time bloomer of this Malagasy orchid, king of the Angraecums. I was so excited to see this one flower! The spur is almost 8" long and accommodates the long tongue of its pollinator, the Sphinx moth, *Xanthopan morgani* *predicta*.



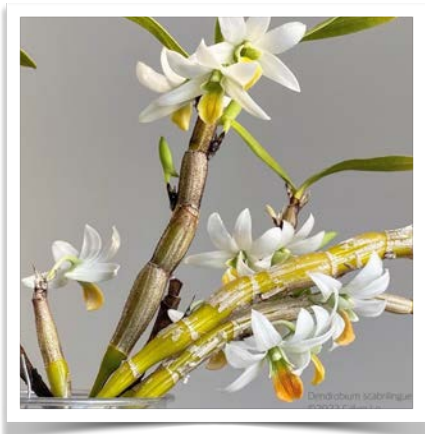
Angraecum germinyanum

This is a species from the Comoros, with a wonderful squid-like flower. I've tried this one a few times and I've found in my conditions that it does better potted. Grown under lights.

Angraecum didieri

The easiest Angraecum to grow, blooming once every 4-6 months. Wonderful evening fragrance, and a compact grower. Native to eastern Madagascar.

An incredibly floriferous Dendrobium from the nigrohirsute/black-haired section. The lip turns bright orange as the flower ages. The flowers smell like lemon cleaner but also slightly like urinal cakes. Likes a drier, cool winter.



Dendrobium scabrilingue





Dendrobium White Grace 'Sato'

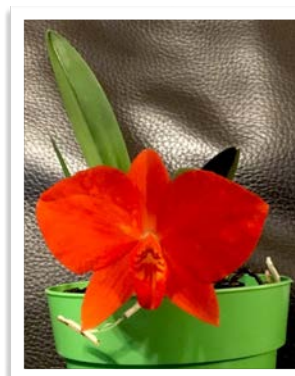
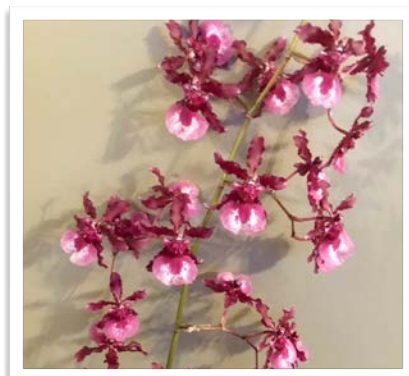
An interesting intersectional hybrid Dendrobium. A first time bloomer with soft fragrance during the day.



Grown by Barry Goheen

***Paphiopedilum spicerianum* x Jollix Large**

Grown by Sherry Fensom



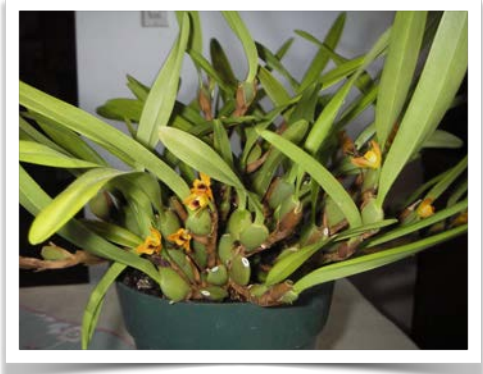
Oncidium Heaven Scent 'Sweet Baby'

Smells slightly of hot cocoa. With over 40 blooms on this spike, I look forward to getting multiple spikes some day on this plant.

Cattleya mantiqueirae x coccinea

This is a lovely little plant that's slow to grow but has been a reliable bloomer for me under an LED grow light.

Grown by Jennifer Osachoff



Maxillaria variabilis

This is an almost non-stop bloomer. The flowers are very small - barely more than 10 mm - but provide a lot of pleasure in the pops of colour. It grows happily along with my Paphs. I try to keep it evenly moist but it does dry out once in a while. It is very forgiving. It grows under 12 hour light - T8 LED Daylight - and is watered with rain/snow water.

Grown by Candice Jackel-Cram



Terrarium, where the majority of my mini orchids live.

Masdevallia nidifica
Ecuagera, 2020



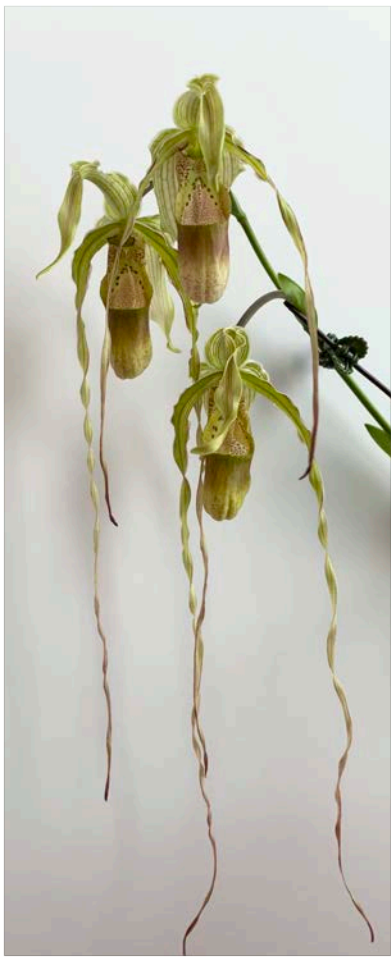
Lepanthes telipogoniflora
Ecuagera, 2020



Lepanthes astroflora
Ecuagera, 2020



Cattleya NOID



Grown by Kathryn Hiller

Phragmipedium Grande (caudatum 'Mandarin' x longifolium 'Giant')

This is the first time this has bloomed for me since it moved to my house from Cheryl Adamson's collection. It brightened up dreary winter when the first bloom opened the last week of January. The following week the second bloom opened and third bloom on Valentine's Day. It grows in a bright east window.

Phrag. Grande
var. Caudatum
'Mandarin' x longifolium 'Giant'

There's confusion/debate/disagreement in the *Phragmipedium* Section Phragmipedium! Just try to figure out the distinction between *Phrag caudatum*, *Phrag humboldtii*, *Phrag popowii*, *Phrag warszewiczianum* - are they synonyms? Are they separate species? And how does that affect the hybrids made with these? Trying to find clarification seems difficult, and ultimately it depends on what articles you're reading, and whether the author taxonomist is a "splitter" or a "lumper" of species.

The line from Star Wars comes immediately to mind: "You will never find a more wretched hive of scum and villainy - we must be cautious!"

In 1922 the Central American populations of *Phrag caudatum* were reclassified as a separate species, named *Phrag warszewiczianum*, making a distinction between these and the populations of long-petalled Phrags of Bolivia and Peru. Most taxonomists agree that this group of *Phragmipedium* is a separate species, but there has been much debate over what it should be named; there seems to be general agreement that *Phragmipedium humboldtii* is the correct name, however some disagree.

The reference below is an excellent, informative, well-illustrated article, and it is available for loan in the SOS Library.

Cervera, F., [A Checklist of Phragmipedium Species](#), Orchid Digest Vol 84-4, Oct, Nov, Dec, 2020 pp 195-227.

So, what does this mean for hybrids with Phrag. caudatum/humboldtii as a parent? Well, officially *Phrag caudatum* x *longifolium* is named *Phragmipedium* Leslie Garay (O.Gruss 2012 RHS), and *Phrag humboldtii* x *longifolium* is named *Phragmipedium* Grande (Veitch 1881 RHS).

And if you have a plant with a tag like the one in Kathryn's plant? This is probably Phrag Leslie Garay, (assuming the "var. caudatum" is referring to one parent being caudatum with the cultivar name 'Mandarin'). Unless one knows the provenance of your plant, if it is labelled Phrag Grande, you should continue to call it Phrag Grande and enjoy the flowers!

Tracey Thue

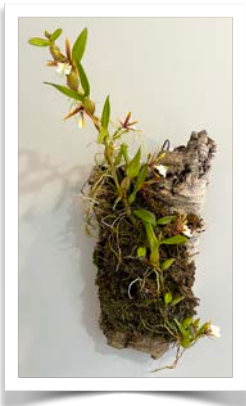
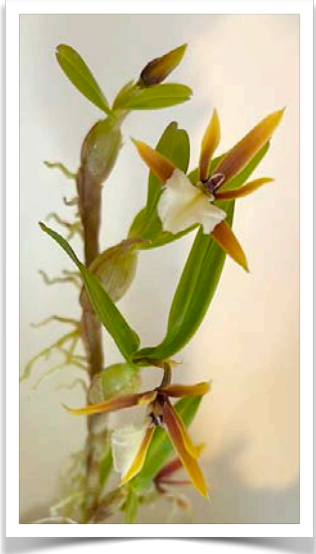
Grown by Sandy Roberts

***Phalaenopsis* NOID**

This beautiful delicate yellow *Phalaenopsis* was a raffle table win. It grows under a grow light with supplemental west window light. It has been in full bloom for about a month.



Grown by Tobi Fenton



***Epidendrum polybulbon* ‘Golden Gate’**

(syn. *Dinema polybulbon* ‘Golden Gate’)

Gold Country Orchids, 2021

A delightful miniature from Mexico, central America, Jamaica and Cuba. I have it growing in a humid terrarium under lights with small fan and intermediate temperature. It started flowering late December and the 2x2 cm flowers are just starting to fade now. They have an unusual scent of citrus (more lime than lemon) - banana - vanilla.



Dendrochilum wenzelii

A division from Tracey Thue, June, 2021

I’m pleased this is flowering as I love this genus with the unusual flowers and grassy, leathery leaves. I was unable to grow a *Dendrochilum cootesii*, so this is encouraging! It’s in a clay pot under lights in a warm to cool solarium, sitting on a tray of wet rocks to increase humidity. Only 4 inflorescences this go ‘round; hopefully more when it’s more settled in its pot. A species from the Philippines. The colour really is that rich, burnt rusty-red.



Grown by Tracey Thue, photos by Sara Thue



***Paphiopedilum* Wonderfully Wood**

Another one from Paph Paradise that arrived in bud. This hybrid was made and registered by Lehua Orchids of Hawaii, who breeds award-winning Paphs that catch my eye whenever I see them in the AOS magazine! The flower is getting a bit old now, with the colours not quite as crisp; dorsal petal had more green behind the striping when it just opened. I just love combination of colors, spots and stripes.



***Paphiopedilum* Snow Castle**

I love white Paphs and couldn't resist the breeding in this complex Paph from Paph Paradise. The flower opened with more light green in the dorsal, which has faded to creamy yellow and I suspect this will continue to fade with age. The flower segments are a bit unbalanced, and it didn't open completely, remaining cupped, but overall I'm pleased and maybe it will have a better shape next time.



***Paphiopedilum* portrait**

Clockwise from left:
Paph Snow Castle, Paph Wonderfully Wood, Paph
(Vixen x Thunder Cat), Paph Fairly Galaxy

Grown by Heather Anderson

***Rhyncattleanthe* Gerardo Nanda Vardhana**

Grown under lights. The bloom has lasted over three weeks.



***Phragmipedium* Cardinal 'Wilcox' AM/AOS**
(often incorrectly labelled *Phragmipedium schlimii* 'Wilcox' AM/AOS)

I am fostering this plant for Cheryl Adamson. It has been grown both on a windowsill and under lights. It sits in a saucer of water and its sister that I own bloomed for the better part of two years so, I expect Cheryl's will also bloom for a long time.



Grown by Pat Randall

***Cymbidium* NOID**

This was one of my first orchids. James Sather (a former member) gave it to me in 2008. It blooms every year with two spikes. I grow it on a stand outdoors from spring through fall. Then the temperatures get very close to freezing, I bring it inside to the greenhouse. It needs those cold temperatures to stimulate bloom. It gets fairly bright filtered light through part of the day outdoors. It should get a fair amount of light through the winter, but it's not under lights and doesn't get too much in my growing conditions. It produces lovely spikes that are very long lasting. I grow it in fine bark and water when it is approaching dryness.



***Phaiocalanthe* Kryptonite 'Parkside' AM/AOS**

I got this from Glen Decker of Piping Rock Orchids when he was our guest speaker in Sept., 2018. I grow it in a moist mulch made up of sphagnum moss and some small bark. It tends to drop its large pleated leaf during spike production and while it is blooming. As spring rolls around it produces a new growth. This grows without artificial light and I try not to let it get too hot in the greenhouse during the summer. I never let it dry out.



Rhyncattleanthe Kaboom

I got this from Fred Clarke of SVO when he was our guest speaker in Oct. 2019. This is a first bloom. I was expecting a brighter yellow in the petals but, with seedlings, you can never be sure! Blooms are fairly long lasting but not much scent. I grow it in medium bark under lights and water when dry.



Rhyncattleanthe Young-Min Orange

In April, 2017 I won this for the Sara Nickiforick Memorial Award at our meeting. It came from Ten Shin. I grow it in medium bark and under lights. Its blooms start out a lighter, brighter orange and develop into a deep, rich orange. Blooms are long lasting.



Laeliocattleya Amarillis Pagan

This is a second bloom of a seedling I bought from Fred Clarke when he was here in October, 2019. It currently has three spikes with seven blooms on a small plant. The blooms start as a clear pale yellow on the petals, then fade to white, and then develop the pink blush. I grow it in medium bark under lights.



Cattleya Milton Warne 'Premier' AM/AOS

I ordered this from the Orchid Species Preservation Society in Edmonton in 2015. It has bloomed every year in late winter or early spring since I got it. It is one of my tallest Cattleyas. I grow it in medium bark under lights and water when it has just dried out. Blooms are quite large, scented and long lasting.



Grown by Deb Huculiak

Cattleya Cariad's Mini-Quinee 'Angel's Kiss' HCC/AOS

I got this as a division from Pat Randall, first time flowering for me. It has a mild sweet fragrance.

Grown by Shayne Feltis



Dinema polybulbon



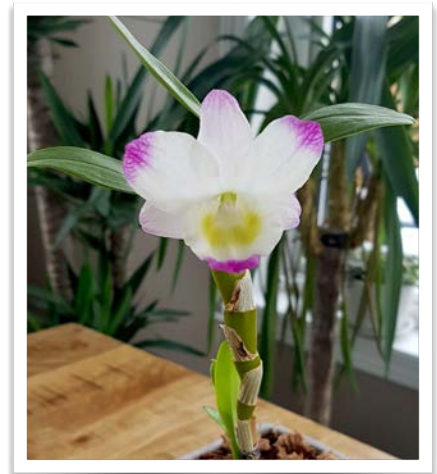
Dendrobium Rainbow Dance



Bulbophyllum Elizabeth Ann



Phalaenopsis NOID



Dendrobium Lucky Girl

THE ROOT TIP

Peat and Fungi to the Rescue By Tobi Fenton



Western Prairie Fringed Orchid
Platanthera praeclara

Photos: Jim Neufeld

<http://themeaner.ca/category/orchids-of-manitoba>



I promise I will not always write about fungus. I promise to try. However, it seems that wherever I look these days, fungus pops up. Whether it's in the Netflix documentary, "Fantastic Fungi," about the medicinal and ecological marvels of fungi, or the regular reference in articles to the necessity of healthy fungus populations for successful re-wilding projects in Europe, fungi are everywhere. In my personal hierarchy of heroes, fungi are nearing the apex. Right up there with the sphinx moth. And sphagnum moss.

In anticipation of this month's guest speaker presentation on the genus *Habenaria*, I peeked online to see what information might be available about the two rare North American species, Western and Eastern Prairie Fringed Orchids. The western species, *Platanthera praeclara* (synonym *Habenaria leucophaea* var. *praeclara*), is found only in a single area in southern Manitoba and is categorized as endangered in Canada. In the midwest United States, its official status is threatened. The eastern sister-species, *Platanthera leucophaea*, is threatened in Ontario and in the midwest United States. Both species occur in mesic (normal moisture content) and wet tall grass prairie, and fens.

This begs the question: what are fens and how do they differ from bogs? Bogs are wetlands that are acidic, with pH less than 7. They occur in poorly-drained areas with a high water table and are fed only by rainfall and snowmelt. These acidic, oxygen-poor wetlands can seem barren at first glance but are a dream world for sphagnum mosses, which grow into the recognizably thick, squishy mounds between pools of standing water. The moss slowly decomposes over *millennia*. Layers of decomposed and partly decomposed mosses and other plants stack up over time, like an enormous botanical lasagne, with the lower layers becoming increasingly dark and compressed the further down into the bog you go: peat. It can take 10,000 years to create one meter of peat. Besides mosses, plants that thrive here are cottongrass, Labrador tea, low bush cranberries and blueberries. And lichen, fungi, and bacteria. And numerous other necessary and fantastic soil decomposers like mites and springtails.

Fens are more alkaline wetlands, with pH greater than 7. They also exist in regions of high water table, but are fed by groundwater - seeps, springs, and slow-moving streams. Fens are "bogs in the making," with peat less than 40 cm thick. Sedges dominate these wetlands but are accompanied by marsh grasses, dwarf birch and willow, orchids, and buckbean. And lichen, fungi, and bacteria. And mites and springtails.

The macro-fauna of bogs and fens include flies, mosquitoes, dragonflies and damselflies, wasps, beetles, spiders, and moths and butterflies; songbirds and hawks; and voles, deer, caribou, foxes, weasels, fishers, bears and wolves. Not barren!

Significantly, in this age of accelerating climate change, bogs and fens are a *massive* carbon sink. It has been estimated that peatlands globally sequester a quarter of the planet's carbon. That's twice as much as forests. The largest peatland was discovered in 2017 under the forest of the Congo Basin. The oldest is believed to be on Borneo, measured at 17 - 18 meters deep and estimated to be 47,800 years old. Imagine, when this peatland was born, early modern humans hadn't yet started spreading into Europe and Neanderthals wouldn't die out there for another nine thousand years. Can you imagine the mass of carbon that has been broken down by fungus and bacteria and locked in that peat over that time span? I can't.

The International Union for the Conservation of Nature states that remaining peatlands worldwide cover 3 million square kilometres and sequester 0.37 gigatonnes of carbon dioxide per year. They hold 600 gigatonnes of carbon - 44% of all soil carbon on the planet. These colossal numbers shatter my imagination; they become meaningless in their immensity. I can only visualize (barely) a bog that is 18 meters deep because it would be twice the height of my house.



A fen, with a slow-moving stream running through it.
Photo: Joshua Mayer
<https://www.flickr.com/photos/wackybadger/20879215963>



Great Kemer Bog, Latvia
Photo: Runa Lindebjerg,
<https://www.grida.no/resources/11007>



Sphagnum moss, Scotland
Photo: Hannah Imlach
<https://www.theflowcountry.org.uk/news/flows-to-the-future-artist-in-residence-blog-hannah-implach/>

North American prairie fens and their denizens face many and complex challenges. These include land development; collection for fuel and horticulture; drainage of wetland by deepening ditches, constructing drains and elevating roadbeds; conversion to agriculture; damage by recreational vehicles; spread of invasive species; fire suppression; ecological succession; effects of climate change, including long term drought, severe weather events, and prolonged flooding; and threats to pollinators, often due to climate change.

A cursory review of the scientific literature quickly reveals that much work has been done in the past two decades to study these threats, and to propose possible strategies for the recovery of fen habitat: prescribed burning to slow succession; control of invasive species; habitat restoration to renew the water table; and artificial pollination and seed germination procedures.

Besides western and eastern prairie fringed orchids, other rare and sensitive species would, of course, also benefit from these actions. Small white lady's slipper (*Cypripedium candidum*), Riddell's goldenrod (*Solidago reddellii*), Great Plains lady's tresses (*Spiranthes magnicamporum*), and Culver's root (*Veronicastrum virginicum*) are all plants of the prairie fen that face the same threats as the prairie fringed orchids.



Great Plains Lady's Tresses,
Spiranthes magnicamporum

Photo: <https://goorchids.northamericanorchidcenter.org/species/spiranthes/magnicamporum/>



Small White Lady's Slipper,
Cypripedium candidum

Photo: Thomas G. Barnes
https://www.fs.fed.us/wildflowers/beauty/cypripedium/cypripedium_candidum.shtml

In the above list of potential recovery actions, did the latter one jump out at you? *Seed germination procedures*. It did for me. You can perhaps imagine my delight, then, when I stumbled across an abstract of an article published in the January, 2009 issue of The American Midland Naturalist. The authors studied the eastern prairie fringed orchid and its symbiosis with the genus of mycorrhizal fungus, *Ceratohiza* (*myco* = fungus; *rhiza* = root). The fungus was extracted from mature *Platanthera leucophaea* roots collected from several sites in Illinois and Michigan, and then introduced to cold-treated *Platanthera* seeds. These inoculated seeds reportedly germinated within 25 days! The protocorms (the orchid tuber and fungal filament structure of young orchids that have this fungal affiliation) were then chilled for 107 days, whereupon the plantlets grew into leaf-bearing seedlings. Thus, the authors proposed that *Platanthera* could successfully be propagated in soil, and then reintroduced to a suitable, restored habitat.

I wondered if anything more recent had been published on this work. Sure enough, a 2020 article in Botanical Studies discusses *Platanthera leucophaea* and its association with mycorrhizal fungi. Furthermore, the authors propose that *P. leucophaea* depends exclusively on *Ceratobasidium* during its entire life cycle, not only for seed germination. Also, *Ceratobasidium* was the primary mycorrhizal partner in eastern prairie fringed orchid in all of the wide-spread study sites, from southern Illinois to southern Wisconsin and eastern Michigan. The reason for this isn't categorically known but it's likely because these fungi best provide the nutrients the orchid needs in its wetland habitat.

Incidentally, the genus name *Ceratohiza* refers to the anamorphic or asexual stage of this fungus' life cycle; *Ceratobasidium* refers to the sexual or teleomorphic stage. The latter is now the preferred name in the literature. Don't you just love botany?

The authors conclude that saving terrestrial orchids depends on: creating seed and fungal storage banks; developing methods for orchid restoration; and managing natural reserves - focusing not only on the needs of the plants but also on those of the mycorrhizal fungi and pollinators. I haven't yet mentioned that prairie fringed orchids, eastern and western, are exclusively pollinated by half a dozen or so species of sphinx moth. Several bee species are "nectar robbers," but don't contribute to pollination because they lack the long proboscides of sphinx moths.

Sphinx moth = Hero.

I may have discovered the theme for a future article. Until then, I'll be fantasizing about leaf mould, plant diversity, compost, zero-till gardening, and other natural ways to increase native mycorrhizal fungi in my garden soil. I wonder which fungus my lady's slipper orchid prefers?



Galium Sphinx, *Hyles gallii*

Photo: Daniel Morel
<http://www.lepinet.fr/especies/nation/lep/?e=p&id=38050>



Achemon Sphinx, *Eumorpha achemon*

Photo: <https://www.sphingidae.us/eumorpha-achemon.html>



White-lined Sphinx
Hyles lineata

Photo: Arlene Ripley
<http://mothphotographersgroup.msstate.edu/species.php?hodges=7894>

References

A Marsh? A Bog? A Swamp? A Fen?

<https://sierraclub.bc.ca/a-marsh-a-bog-a-swamp-a-fen/>

Eastern prairie fringed orchid: recovery strategy 2012.

<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/eastern-prairie-fringed-orchid-2012.html>

Further evidence of *Ceratobasidium* D.P. Rogers (Basidiomycota) serving as the ubiquitous fungal associate of *Platanthera leucophaea* (Orchidaceae) in the North American tallgrass prairie.

<https://as-botanicalstudies.springeropen.com/articles/10.1186/s40529-020-00289-z>

Mycorrhizal Fungi and Cold-assisted Symbiotic Germination of the Federally Threatened Eastern Prairie Fringed Orchid, *Platanthera leucophaea*.

https://www.researchgate.net/publication/232673145_Mycorrhizal_Fungi_and_Cold-assisted_Symbiotic_Germination_of_the_Federally_Threatened_Eastern_Prairie_Fringed_Orchid_Platanthera_leucophaea_Nuttall_Lindley

Platanthera leucophaea

<https://goorchids.northamericanorchidcenter.org/species/platanthera/leucophaea/>

Platanthera praeclara

<https://goorchids.northamericanorchidcenter.org/species/platanthera/praeclara/>

Peatlands, Hinterland Who's Who

<https://www.hww.ca/en/wild-spaces/peatlands.html>

Peatlands and Climate Change

<https://www.iucn.org/resources/issues-briefs/peatlands-and-climate-change>

Prairie Fen

https://mnfi.anr.msu.edu/abstracts/ecology/Prairie_Fen.pdf

Species Profile, Eastern Prairie Fringed Orchid

https://wildlife-species.canada.ca/species-risk-registry/species/speciesDetails_e.cfm?sid=248

Western prairie fringed orchid COSEWIC assessment and status report 2016.

https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/western-prairie-fringed-orchid-2016.html#_02_2



Eastern prairie fringed orchid flower and seed pods, and mesic to wet prairie, The Swamp Lover's Preserve, Wisconsin.
Photos: Steve Glass, The Restoration Ecology Lab

<https://chapter.ser.org/midwestgreatlakes/2015/10/08/photo-essay-on-restoration-of-eastern-prairie-fringed-orchid-in-wisconsin/>