Texas Gulf Coast Fern Society

November 2020 **Vol. 22 No. 11**

http://www.tgcfernsoc.org

Due to COVID-19 restrictions our meeting this month will be another "virtual" one. See below.

A message from our President:

Hi Everyone,

I hope everyone has had a wonderful month! I hope some of you got some much need rain, our side of town (northwest) is in that dry section right now. It is that time to start getting your tropical ferns and plants in to protect them from the cold this winter. Joe and I have started to get everything in, but I always hope for a mild winter. It does not kill the mosquitos off anyway, so we may as well save our plants.

I would like to thank Jere Noerager, Ceil Dow, and Larry Rucker for chairing and working on the nomination committee. I appreciate all the members' participation and I would like to extend a welcome to those that have accepted the call to help guide this society forward for years to come. Not knowing for sure how the year 2021 will play out as far as being able to meet in person. So we will play it by ear and do the best we can to keep learning about ferns. We have the full slate of officers in the minutes of this newsletter.

I'm putting in the article about treating scale again, it is the hosting time of the year, and when plants are housed too close together it can really spread fast.

We have the honor and privilege of having Adam Black speak to us on the "Ferns of New Caledonia Part 2". Adam spoke to our group a couple years ago after he make his first trip there, and he just got back this past February from and second trip. So he is going to share his experience with us and walk us through the land of endless ferns as well as a host of other rare plants. Adam is a very broad plant person, so he is able to really speak to the subject matter in the largest since. I do hope everyone will be able to attend!

We have been averaging about 25 attendees to our meeting, but I would like to see and hear from the rest of you! Let me know if it something I can help you with!!

The new meeting number for our ***GoToMeeting*** will be sent out on Friday the 13th. The meeting is scheduled for 2p CST on this Sunday the 15th.

Looking forward to seeing everyone Sunday!

Talk care everyone!! And stay safe!

Darla

The American Fern Society (AFS)

The American Fern Society is over 120 years old. With over 900 members worldwide, it is one of the largest international fern clubs in the world. It was established in 1893 with the objective of fostering interest in ferns and fern allies. It exchanges information and specimens between members via their publications and spore exchange.

AFS non-professional membership ($20) includes access to the Spore Exchange and subscription to the Fiddlehead Forum.

Professional membership ($40) includes the benefits above plus access to the American Fern Journal.

Please note that donations to the AFS are not tax deductible.

To find out more about the Society and/or join, visit https://www.amerfernsoc.org/

2020 Officers and Committees:

President:	Darla Harris
Vice President:	Patrick Hudnall
Secretary:	Donna Williams
Treasurer:	Beth Ayer
Board Members-at-Large:	Ceil Dow
	Jere Noerager
	Cherie Lee (Past Pres)
Education Chair:	Darla Harris
Hospitality Chair:	Larry Rucker
Library:	Ruth McDonald
Membership Co-chairs:	Beth Ayer and
	Marcia Livingston
Newsletter:	Paul Geiger
Spore Exchange:	Patrick Hudnall
Ways and Means:	Larry Rucker
Raffle, Store, etc.	Biruta Claunch
Web Master:	Malcolm McCorquodale
Welcoming at Door:	Faye Stansberry

Minutes of Virtual Meeting via "GoToMeeting"
October 20, 2020
Texas Gulf Coast Fern Society

26 members present

Business Meeting:

The nominating committee, which consisted of Jere Noerager, Larry Rucker and Ceil Dow confirmed the following nominees for officers:

Darla Harris, President
Patrick Hudnall, Vice President
Beth Ayers, Treasurer
Ceil Dow, Secretary
Jere Noerager, Board Member at Large
Ken Warren, Board Member at Large.
Cherie Lee, (Past Pres.) Outgoing Board Member at Large

Darla asked the members if anyone wanted to take the responsibility of being President. No one responded so she accepted the nomination.

Betsy Robinson motioned to approve. It was seconded by Beth Ayer and Cecil Strange voiced a third.

Slate of Officers accepted.

Darla Harris noted that because of the pandemic, we will continue to host online meetings and even offsite speakers.

Jere asked about the cost to set up this kind of meeting: The answer is that Zoom costs $150 a year and limits the number of people attending, whereas, "Go to Meeting" allows 100 people at $99 per year. Darla did request the Judson Robinson Jr. Community Room for 2021 but we may not need it.

Betsy Robinson suggested at the end of the meeting to enlist a person to help facilitate the "Go To Meeting" online meetings.

Presentation: Lycopodiaceae, Cultivation & Ecology of Terrestrial Club Mosses

The speaker was Dr. Jeff Benca, Horticulturist at Amazon Spheres, Paleobotanist at Burke Museum of Natural History & Culture. Email Address: jbenca@uw.edu.

The name Lycopodiaceae is derived from the Greek word lycos which means wolf and poda for foot or paw. Upon close up observation, the fronds look like a wolf's paw.

Lycopods have a rich fossil record. During the Silurian period, Lycophytes split off from the other spore plants, ferns and horsetails. During the Carnivorous Period, they evolved into the first tree that were at least 6' wide. These Lepidodendrons are a large part of the coal forest flora.

In the beginning, before there was even soil, lycophytes would grow around waterways en masse. They survived in hostile environments with poisonous gases. They initially looked like small tuning forks, no bigger than an inch tall. They evolved into microphylls; needle like leaves that is attached to a single vein. Unlike megaphylls, which are the large flat leaves we see on most deciduous plants today.

There are only three members of the ancient Lycopsida family living today: Lycopodiaceae, Isoetaceae, Selaginellaceae.

Tree dwelling club mosses are declining in their native habitat. Habitat loss and an intense pharmaceutical interest has caused them to be over collected for its use as a treatment for Alzheimer's disease.

Terrestrial club mosses are very rare in horticulture. They are often classified as fern allies and lumped together with ferns as part of their lineage. However, they are not ferns. Their growing conditions were often grouped together: organic rich soil; shady, cool moist environments and no fertilizer. However, after many failed experiments, the author discovered that Club Mosses prefer a different culture. He cultivated experiments where 9 genera of club mosses were grown in a greenhouse environment. Samples were washed upon arrival, wrapped in paper towels and placed securely in Ziploc bags. After several weeks, the Ziploc bags were opened and found that the mosses had grown roots. The rooted samples were planted in a clay and sandy loam. Loam is defined as varying amounts of sand, clay & silt. Flats were used as containers. The rooted club moss was laid horizontal and covered with a humidity/propagation dome. After they become established, fertilizers were added. Success was best when greenhouses had at least 70% humidity, lots of ventilation and temperatures averaging 75 degrees. If humidity fluctuates too much, the moss samples would die.

It was discovered that when the samples grew into lush verdant mounds, this was the best time to propagate them. Rhizomes would start to rot at the tip and die back if not propagated at this point.

There are a few reasons that samples failed to grow. Club mosses need water on a regular basis. They cannot take up water in their vascular system if it has been allowed to dry out. Club mosses need bright light conditions not shade or an understory situation. The soil medium is important. When found in nature, roots are tapped into mineral rich soils or mineral substrates. Organic poor soil is best.

After many years of experimentation with club mosses, the author found that they are not sensitive to root disturbances. Mycorrhizal associates are not necessary. Environmental quality is definitely necessary. They need consistent humidity in a greenhouse environment with mild climates. Evaporative cooling or swamp coolers are beneficial. Fertilizers used in the experiment varied but 20-20-20 is a good mix.

Ball Club Moss is a good Lycophyte for growing in Texas. They like full sun but keep wet.

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Fern Scale - How to Treat

Keeping our ferns health is an important task. Whether it is with proper water and light, nutrients or pest control. The good news is ferns are nearly pest free! Except for the Fern Scale. I'm seeing more and more of this on ferns, both in the trade plants and in collectors' ferns. They can be tough to see them to start with and if they get really happy on your plant they can be very challenging to get rid of.

Here in the Houston area the collectors of Platycerium ferns started seeing black spots on the staghorn fertile frond. (Fig. 1) What this is was the sweet honeydew type excretion that the scale exudes as it is sucking the underside of the fronds above these. So we were seeing it on the oldest fronds and though it was just a sign of an older frond. So the black is known as sooty mold that is the growth of fungal organisms that produce a black coating on the leaves. These fungi feed on the honeydew and do not attack or directly damage the plant. Sooty mold, however, has an unattractive appearance and is often the gardener's first noticeable sign of trouble, before we ever see the crawling scales.

Fig. 1

Now seeing the scale in the crawler stage is difficult, we typically see it in the white armor stage, it looks like an oyster shell or pear shaped tiny object on the back of the frond (typically) but can be on the front side too if it has a lot of them. (Fig. 2, 3)

Fig. 2

Fig. 3

Once the scale has been sucking the life out of the frond and eventfully the plant you will see the damage to the frond itself. (Fig. 4) Once the insects bites into the fern to feed and pierce the plant's tissue with their sharp mouth parts, they never move again and become firmly attached to the leaves or stems. What we normally see it the white armor part of the scale insects once they cover themselves with waxy material that protects and hides the insect. Now if you only have a few of these white armors showing you can dab them with a Q-tip dipped in alcohol. The alcohol will melt that waxy material, reach the sap sucker and kill it. You have to kill every one of them or it will start all over again.

Fig. 4

Treating from the inside out and the outside is the best way to really get rid of the scale once you have it. Treating the inside is with a systemic insecticide. A good one is Bayer Advanced All in One Rose & Flower Spray concentrate or the pellets. These are good for about three months and then will need to be retreated. The insecticide gets into the sap of the fern and when the scale eats it, it will kill them. The second way is contact insect killer, but as the name suggest it has to make contact with the pest. So if you spray your plant well and miss just one, you get them started all over again. A good contact sprays is Sevin. Now for me, I thought it was working well and fond I was not getting the plant sprayed well enough and the battle was never over. What I have tried now is Orthene soluble insecticide. It is both a contact and a slightly systemic insecticide and it seems to be doing very well. We mixed it up and put every staghorn fern we had in the dip, saturating the full plant, the moss, and the board. It killed any other pest like pill bugs, roaches that might have been hiding in the moss. After a couple days I was able to take the water hose and pressure wash the scale right off. They had died and let go of the tissue of the plant. However this took almost two weeks of dipping with the number of plants I had to do. So now I have been told by a staghorn grower that has wonderful success both growing them and keeping them pest free, that he keeps a 16oz spray bottle with 5 drops of Permethrin 10 (buy it online or at a feed store) keeps it mixed up and at the first white dot he sprays them down with this. How long does Permethrin last? At the concentration level delivered in the aerosol, non-aerosol pump sprays and soak systems (all at 0.5% Permethrin), an application lasts for **six weeks** and through six washings. Permethrin breaks down through exposure to air (oxygen) and sunlight (ultraviolet light). You do not want to apply this in the heat of the day when it is too sunny. Wait until the evening so as not to burn your fern fronds.

Always remember a healthy plant is less likely to get scale in the first place. Keep good air movement going and don't let the plant get stressed, too much water, too little water, too sunny! Let's knock out these pest from our gardens.

Submitted by Darla Harris