



February 2023

Vol. 25 No. 2

<http://www.tgcfernsoc.org>

Our meeting this month will be “blended” by meeting in-person at the Judson Robinson, Jr. Community Center (2020 Hermann Dr., Houston, 77004 and/or via *GoToMeeting* – member’s choice.

TGCFS MISSION STATEMENT

Organized in 1998 by a group of fern enthusiasts (a.k.a. fern lovers, fernies, pteridologists), to cultivate, foster and promote interest in ferns and fern allies, the TGC Fern Society presents educational programs including “how to” sessions, presentations by local, national and internationally known fern experts, and field trips and tours-thus providing a forum for fern enthusiasts to visit, learn, share plants, ideas, information, and have a good time. A very informative monthly newsletter is published for members, and special events include presentations to other groups, fundraiser events, and a year-end holiday season party. **Regular meetings are held at 2:00 P.M. on the third Sunday of each month at the Judson Robinson Jr. Community Center, 2020 Herman Drive, Houston, TX, 77004. Phone (713) 284-1994.**

A message from our President:

Hi Everyone!

Well, we had a nice turn out for our January meeting!! The January meeting was the last of our PhD speakers for the near future. I know many thought the meeting was over their heads, and I do understand! When I started with this fern society in 1998, I only knew common names and none of the terms, but after years of exposure to all aspects of ferns over the years I have been able to broaden my understanding of ferns, what they need and why! To understand why they grow in one spot and not another. Why one can take more light or even more sun than another one, and this is learned by understanding the physiology, the makeup of the plant itself. Once you start leaning these things you grow better plants You learn how to identify your plant and this makes growing ferns so much more fun. We are all still leaning; we are all just at different stages of it, so at our meetings we try to give those at all levels something that they can learn new too.

This month we have our own Patrick Hudnall that is going to talk to us about growing tree ferns here in the Greater Houston TX area. He will have information for those that live in different regions as well so it will be a talk for everyone. Patrick will have examples of some that he is growing as well as Joe and I, and we will have a few for sale at the meeting for those that have never tried them before. So after leaning a lot more on the dos and don'ts of these magnificent ferns you will be wanting to try one for your own collection.

Next month we will NOT be having our normal field trip. It has been decided to have it in May so more ferns will have a chance to recover from this cold winter. If you have a

suggestion on a place for a field trip it is still under consideration at this moment, so add your two cents; please!

The March meeting will be a talk on *Adiantum* aka maidenhair ferns. How to grow them and showing the diversity of them. We will have about 12 plus different maidenhairs to show how they differ from each other in looks, but most grow very similarly. This will be given by me, Darla Harris. More information in next month's *Newsletter*.

Don't forget your dues are due! The membership form is attached with our new Membership Chair's information on it. Alicia Baker has agreed to take on this responsibility for this year. I would like to once again thank Ruby Adams for handling this last year.

I know the winter has been tough, but can you believe we did not have one raffle plant for the January meeting. Not one! Let's all take a look at our things and pick out something for the raffle. Rick Dow, our raffle chair, took it very personal! (LOL). That is always a rewarding part of the meeting: rehoming our plants and plant products.

We are still looking for someone that would like to oversee the refreshments and be our Hospitality Chair. I would like to thank everyone that brought food. One more thing Beth Ayer has brought drinks for years now so that was always something we did not have to cover. Well Beth has decided she would like to change up and bring food products for a change. So please plan on drinks as a need from now on!!

Our Fern of the month got off to a great start. The family *Davaillia*, aka rabbit foot ferns, was featured. We had a few examples and Patrick Hudnall divided one to show how easy this can be done. Of course we did not do one that had

grown around itself a hundred times. Look further into the newsletter for this month's fern of the month.

We will be having another door prize this month for those attending in person! You do have to stay until we draw the numbers.

Looking forward to seeing even more of you at our February meeting!! Stay warm and safe!

Darla

Sunday's Topic: Tree Ferns

By: Patrick Hudnall

The talk will cover how to successfully cultivate tree ferns, how to identify them and some of their background. Pat is primarily a self-taught grower and has grown about half a dozen species, include 2 he grew as a teenager in the early 70s.

Since moving to Houston 25 years ago he has always had tree ferns under cultivation.

Horticultural Bio of Patrick Hudnall:

Pat's maternal family were avid gardeners in San Diego starting in the early 1920's. His Dad, a Navy man settled with his immediate family in San Diego in 1965. Their home had a very diverse garden where every space was used. Pat was drawn to ferns in high school while taking a Horticulture class. He worked in a few "Big Box Store" nurseries in high school, after hours, working for Turner's Tropicals, mounting Staghorn ferns for wholesale. Instead of a cash payment he would take home a nice fern specimen. When starting at his first nursery he bought a 29 cent, 2" plant labeled *Alsophila australis* (properly known as *Cyathea cooperi*). It grew fast. Shortly, he added a same-size *Dicksonia antarctica*. After filling a 1-gallon pot he planted them on the shady side of his parents' house where it thrived.

After a brief stint in college and a career in the Navy he settled in Missouri City, Texas. During his time in the Navy, he spent several years stationed in San Diego where he experimented with growing various types of plants. He spent a tour of duty on Oahu visiting gardens around the islands between deployments to the Western Pacific, where he would visit botanical gardens in various tropical ports of call. Now in Texas and with a regular job, he started collecting interesting plants. He eventually answered a notice in the Houston Newspaper to attend a meeting to discuss forming the Texas Gulf Coast Fern Society. Shortly thereafter he joined the newly formed club and started learning about the wonderful world of ferns.

Dues! Dues! Dues!

Dues are payable for 2023.

Your dues may be paid in person at a meeting or sent by mail to me: Beth Ayer, 5815 Portal Dr., Houston, TX 77096.

Checks should be payable to: **Texas Gulf Coast Fern Society (TGCFS).**

If you have any questions about the status of your dues please contact me at either: beth.ayer@yahoo.com or 713.729.0994 (landline; you may leave a voice mail message) or Alicia Baker – See attached Membership form for further information.

2023 Officers and Committees:

President:	Darla Harris
Vice President:	Patrick Hudnall
Secretary:	Ceil Dow
Treasurer:	Beth Ayer
Board Members-at-Large:	Ruby Adams Ken Warren
Education Chair:	Darla Harris
Hospitality Chair:	Larry Rucker
Library:	Fred Robinson
Membership Chair:	Alicia Baker
Newsletter:	Paul Geiger
Spore Exchange:	Patrick Hudnall
Ways and Means:	Larry Rucker
Raffle, Store, etc.	Rick Dow
Web Master:	Malcolm McCorquodale
Welcoming at Door:	TBD

4th Quarter 2022 Treasurer's Report

October 1, 2022 to December 31, 2022

Income:

Dues:	\$205.00
Raffle:	\$58.00
Donations:	\$45.00
Interest:	\$2.62

Expenses:

Program Expense	\$1766.34
Bank Charges	\$32.00
Balance on 12-31-2021:	\$15,798.79
Balance on 12-31-2022:	\$14,691.46
Net gain for 4Q22:	\$1487.72
Net gain for 2022:	\$1107.33

Beth Ayer

Minutes of Blended Meeting via "GoToMeeting" and In-person

January 15, 2022

Texas Gulf Coast Fern Society

Meeting was held at 2:00pm at the Justin Robinson Community Center in Hermann Park. Members unable to attend the in-person meeting could still participate through the "GoToMeeting" app.

The meeting was called to order at 2:05 pm by Darla Harris. Approximately 27 members present in person & online. The first part of the meeting was a presentation on the *Davillia* genus. A detailed handout on the genus was provided in the January GCFS newsletter. Darla Harris provided plants to show what the varying species of *Davilla* looked like. Some of the plants observed were:

D. tyermanii – White Rabbit’s Foot is the most common and does quite well in our area being a zone 9 plant. It’s a fast grower and puts off a lot of fuzzy feet (rhizomes). Making it a very attractive fern.

D. trichomanoides - Black Rabbit’s Foot. Comes from Malaysia and likes to be grown in partial to full shade.

D. fejeensis major – Deer Foot Fern. Comes from Fiji. This is a larger fern with large thick rhizomes that tend to grow downward. The fronds are large and coarse. Not cold hardy
D. fejeensis major ‘Plumosa’ is a cultivar of the Fiji form, but is very soft and fine. This is the one grown at Longwood Gardens for those that have been there. Not cold hardy.

D. pyxidate is not as commonly found, but needs to be! Its rhizomes grow very upright and this can be planted in the grown as a footed grown cover. Zone 8-9.

D. solida has several cultivars. Grows well and makes a beautiful full hanging basket. Zone 9

D. parvula is a 1” frond that is grown in terrariums.

D. repens is also a terrarium fern with fronds 2”-6” with almost red rhizomes.

Patrick Hudnall, demonstrated how to divide a *Davilla tyermanii*.

New this year, is a fern give-away for in-person participants present at the meeting. A gorgeous *Microsorium diversifolium* or “Kangaroo Paw Fern” was given away as the door prize. Betsy & Fred Robinson won the prize!

Some Thoughts on the Double Life of Ferns and Their Eco-physiology

By: Dr. Christopher P. Krieg

Dr. Christopher P. Krieg, University of Wisconsin at Madison, Wisconsin,

He is a plant Eco-physiologist who uses interdisciplinary methods to uncover the ecological and evolutionary processes that generate diversity in plant form and trait function, and how physiological diversity shapes plant ecology & distributions.

Ferns are seed free vascular plants.

(Secretary’s Note: *His presentation was so esoteric & complex that I found the following information from the Botany Dictionary to help understand his slides & information.*)

Gametophytes are the stage which produces sex cells in plants and algae that undergo alternation of generations. Among land plants, these sex cells may be referred to as “sperm” and “eggs,” with “male” and “female” sex cells combining to produce offspring.

Unlike animals and other organisms that use sexual reproduction, gametophytes do not produce their sex cells through meiosis.

Instead, all cells within a gametophyte organism are haploid – that is, possessing only one copy of each chromosome – and these haploid organisms produce gametes through mitosis.

This is in contrast to animals and other organisms who are diploid – having two copies of each chromosome – and who must cut their number of chromosomes in half before they can create sex cells that have the right number of chromosomes to produce healthy diploid offspring.

Gametophytes’ offspring are indeed diploid plants, and these diploid plants will use meiosis to reproduce. But in a surprising twist, the diploid offspring of gametophytes are called sporophytes.

Instead of using meiosis to produce sex cells, they use meiosis to produce spores – which then undergo mitosis to grow into whole new haploid organisms, a.k.a. gametophytes!

This alternation of generations is a survival strategy in which a plant or algae alternates between different reproductive techniques.

The gametophyte – usually considered to be the first stage of the cycle – reproduces sexually, combining reproductive cells from two different organisms to produce genetically diverse offspring. This allows the plant population to mix and match traits during gametophyte reproduction, which makes the populations more immune to disease and more adaptable to changing environmental conditions.

The sporophyte offspring of gametophytes, on the other hand, can spread rapidly and do not need partners to reproduce. This allows a single sporophyte to found a whole new population, which can then mix genes with neighboring populations in the gametophyte generation. Spores can also survive for many years in hostile conditions, while sperm and egg cells cannot.

This alternation of generations allows the parent plant to take advantage of both the benefits of sexual reproduction – such as genetic recombination which promotes genetic diversity – and the benefits of asexual reproduction, such as speed and rapid growth.

Common plants which use alternation of generations include mosses, ferns, and pine trees. In a strange evolutionary reversal, seed plants which use alternation of generations, such as conifers and other pine trees, develop their whole gametophyte life cycle stage inside of an enclosed cone. By contrast, in some other species, the alternation of generations is quite visible. Among ferns, for example, the

sporophyte is the familiar large, leafed plant often seen on forest floors.

The gametophyte, on the other hand, is a tiny heart-shaped plant that may be easily mistaken for a totally different species from the sporophyte generation.

Function of Gametophytes

Gametophyte plants produce sex cells – referred to as “sperm” and “eggs” in land plants – in order to allow their lineage to undergo sexual reproduction.

There are many known benefits to sexual reproduction, as the ability to combine genetic traits from two individuals results in a variety of different combinations of traits within the population. This diversity is extremely beneficial for disease resistance and the ability to respond to environmental change.

Ferns and other plants that practice alternation of generations use gametophytes to perform sexual reproduction, and keep their populations genetically diverse. Interestingly, whether gametophytes or sporophytes are “dominant” varies depending on the plant. Among ferns, for example, the gametophyte generation takes up more of the life cycle’s resources, growing into a large, visible plant that we recognize.

Among conifer trees, by contrast, it’s the sporophyte generation that is “dominant” – growing into huge, long-lived trees, while the gametophyte generation is restricted to a tiny organism growing inside of a cone.

Examples of Gametophytes: Ferns

Ferns are a gametophyte. The graceful, fringed leaves are haploid – meaning they have only one set of chromosomes and produce sex cells through mitosis, like all gametophyte plants. The tiny sporophyte generation grows right up from the leaves of its parent gametophytes.

The tiny sporophyte plants are diploid – meaning that they have two pairs of chromosomes, and will undergo meiosis in order to produce spores.

These spores can be seen as a fine powder coming off of the brown dots on the fern leaves when the time comes. A single fern spore can be carried by the wind, land in a new place, and grow into a gametophyte plant. That single gametophyte plant can then self-fertilize and produce a generation of new sporophytes!

Sporopollenin is a decay-resistant complex biopolymer that constitutes the outer wall of spores and pollen grains. This protective coating help to protect the spores against desiccation and decay. Sporopollenin is so decay resistant that for a long time scientists could not figure out what it is made of.

Synthesis is how plants pay for things. High photosynthesis usually means high nitrogen. High nitrogen usually means a shorter lifespan. Short lifespan usually mean high growth rate.

Turgor loss point or TLP, is a measure of how well a plant can tolerate drought. More negative TLP, more the plant is

drought tolerant. Less negative TLP means less drought tolerant.

In conclusion, plants are where they are because they have the traits to be there. Traits related to growth, photosynthesis and stress tolerance drive positive growth rates and successful reproduction in plants. Different physiological strategies help explain different geographic distributions across species.

Questions & Answers

Question: Is turgidity similar to barometric pressure? Do they act similarly?

Answer: Plants do not move water according to weather. Pressure is negative in plants. Pressure inside of leaf is liquid water or saturated vapor. Outside of leaf is unsaturated vapor.

Question: Can gametophytes have a broader range of living conditions than sporophytes?

Answer: A main growing season can be different for gametophytes and sporophytes. A growing season for gametophytes is not necessarily the growing season for sporophytes.

Respectfully submitted by Ceil Dow.



Minutes of the TGCFS Board of Directors Meeting

Board Members Present:

Darla Harris

Patrick Hudnall

Beth Ayers

Ken Warren

Ruby Adams

Ceil Dow

Meeting was called to order at 3:55pm by Darla Harris.

”GoToMeeting” Virtual Meeting yearly fee should be included in the budget for 2023. Also included in the budget should be \$1500.00 for lecturer fees.

Discussion was created regarding using \$25.00 for the hospitality expenses. Beth mentioned that the new Hospitality Chair must be responsible to keep & share the receipts with her so TGCFS can claim it for IRS expenses. It was mentioned by Ruby that food prices have escalated so much over this past year. Darla suggested that 3 people be in charge of food hospitality. These 3 members would coordinate people to bring food to the next meeting. Ruby suggested everybody make food donations to pay for the next month’s meeting food expenses.

Patrick suggests money is needed to advertise TGCFS in flyers. Color copies are expensive. Ruby volunteered to print these flyers off at home. Darla says color paper with black and white ink should be less expensive. TGCFS will pay for the ink cassette and the paper. The flyers should be ready before March for the John Fairey Garden sale and

Mercer's March Mart. Beth has an old flyer that she will share with Ruby so it can be copied.

For every meeting at the Community Center, TGCFS will allocate \$25.00 from the budget for the door prize.

Omitting \$25 per month for hospitality and adding \$25.00 per month for the door raffle to all people that attend the meeting in person.

Budget should also include the monies collected at the raffle which will go to the year's craft projects. Raffles monies range from \$50 - \$100.00 per meeting.

The hands on activity worked well for the first 30 minutes of the Jan 15, 2023, meeting. Unfortunately, two members left before the meeting was over because they did not like the lecture topic.

The summer craft project was discussed using approximately 3 ferns & a wood frame to create a "living wall". In October, it was suggested by Darla to create a terrarium Christmas ornament. The larger the globe, the easier it would be to plant/grow the tiny plants in it.

Darla would like internet speakers to have a demonstration or a PowerPoint presentation. In the past, speakers like Linda Gay requested \$150 even though she was a member. Out of town speakers needed a \$500 - \$600 ticket plus room & board to make their presentations. The virtual meetings are so much more cost effective. The California Fern Society has a virtual program that is a tour of their gardens & propagation areas.

Patrick Hudnall motioned to designate \$1500 for speaker projects & all proposed changes be made to the 2023 budget. Ken seconded the motion.

Respectfully submitted by Ceil Dow.



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/>



Important Announcement Regarding Amazon Smile

"I want to thank those of you who have used AmazonSmile over the past several years and designated the Texas Gulf Fern Society as your charitable organization. We have received several donations from them. We have received notification that AmazonSmile will be ending their current program on February 20, 2023 and transition to a program that supports their targeted philanthropic efforts."

Respectfully submitted, Beth Ayer



January 2023 Door Prize

Fred Robinson was the lucky winner of this 10" hanging basket: **Microsorium diversifolium**. Aka Kangaroo Paw fern.

Congratulations, Fred!



FERN OF THE MONTH – February 2023

Cyrtomium aka The Holly Ferns

Cyrtomium is a [genus](#) of about 35 [species](#) of [ferns](#) in the [family Dryopteridaceae](#). Mostly from Asia, and Africa including Madagascar. They are closely related to the genus *Polystichum*, but the *Cyrtomium* takes our heat better than the *Polystichum* does. They are easy to grow and in years that our winters stay in the zone 9 temperature range stay evergreen. During the colder winters they can go dormant and come back up in the spring. Once established they are pretty care free needing only normal watering when planted in ground. They can be grown in pots and even hanging baskets for that nice winter evergreen fern that you don't have to protect.

They are a clumping type fern so they do not spread all over, however they do grow easy from spore and can come up in other places in the yard.

Cyrtomium falcatum 'Rochfordianum' – Japanese holly fern is the most commonly grown of this family in the Houston area. It is considered fairly reliable in Zone 7b, but no further north. They are one of the larger Holly ferns with fronds reaching 2.5-3'.



Cyrtomium falcatum subsp. *Littorale* 8" tall x 18" wide, other than the dwarf size it is listed as a Zone 7a plant, but we wouldn't be surprised at all if it's also hardy in Zone 6. I see a nice blue hue to the fronds on this one, with the very deep green fronds. It's a nice smaller fern for smaller areas you would like to have a nice clumping fern.



Cyrtomium fortunei var. *clivicola* a smallish fern with more of a lime green foliage. The growth is in a rosette pattern and getting only a foot to a foot and a half tall.



Cyrtomium fortunei again has the lime green foliage this one grows more random fronds that arch down. Still a small fern at about 2' wide and tall.



Any or all of these would be wonderful to add to your yard and collection.