Chinquapin

Volume 29 (1) Southern Appalachian Botanical Society Newsletter Spring 2023

Your New Editor

by Lytton John Musselman, newsletter editor

I am pleased to be the new editor of our newsletter.

As an undergraduate in my home state of Wisconsin, I worked in prairies and learned the value of field work. I spent the summer after graduation at the Mountain Lake Biological Station where the rich flora was new and intriguing, introducing me to new families and genera. Fifty years as a botanist in the Coastal Plain of Virginia never eroded that love for the Appalachian flora.

Eager to know more about this flora, I joined the Southern Appalachian Botanical Club (as SABS was then known) and subscribed to the SABS journal, *Castanea*.

In many ways, Chinquapin embodies the earliest goals of the society—developing interest in the region's flora and sharing the knowledge of its plants with the public. The content, therefore, will include botanical knowledge and society news.

The subject matter of the newsletter will remain. We have an idea of what topics readers would like to see (and actually read) through a reader survey developed by the outgoing editor, Joe Pollard. Therefore, the Botanical Brainteasers column will continue. Since it is a newsletter, society news will highlight the research of awardees of awards offered by SABS. There will also be notes on some of the papers appearing in upcoming Castanea issues. Like prior issues, I expect articles on nomenclature, botanists, history, ethnobotany, poetry and more.

I would like to develop some new features for future issues. One will be called Here and There. This will be a travelogue with a botanical spin, pointing out plants familiar to our readers though they may grow on another continent. I expect to do a column on the origin of common names of Southern Appalachian plants based on the Bible—cedar being a prime example.

Please email me at lmusselm@odu.edu with your articles you think would be suitable. They should be of general appeal to members of the society and non-academic plant lovers.

Reports From Recipients of the Fairey Field Station Scholarship

The generous will of Dr. John E. Fairey III. bequeathed funds to our society which provide scholarships to students wishing to study at a biological field station. Here are the three reports from the 2022 awards. Their enthusiasm for plants is palpable!

Cliff and Rock Outcrop Communities, Highlands Biological Station

Tara Hall, Catamount Institute, Western Carolina University

I arrived at Highlands Biological Station in mid-July with limited knowledge of what to expect from the course and only a baseline understanding of cliff ecology and rock outcrop communities. I was hoping to increase my rare plant identification skills and further my appreciation of ecological communities in the Southern Appalachians, and this course truly delivered beyond what I thought possible in just five days. Our course instructors were Laura Boggess and Gary Kauffman.

We spent a portion of each day at the station learning about the many unique communities that are found at different elevations and on different rock types, with particular focus on the granitic domes and high elevation rock outcrop communities in the Southern Appalachians. Throughout the week, our class took field trips to several nearby rock outcrops to become familiar with the various community types and common species. In addition to learning some of the more ubiquitous Southern Appalachian rock outcrop plants, Gary was always eager to delve deeper into the intricacies of the numerous rare and endemic species we encountered. I certainly took advantage of having one of the leading botanists in the state at my constant disposal, asking him to identify plants in the field at every chance I could and hoping to absorb even a bit of his extensive wealth of knowledge.

Lichens are a group I was always curious about, and luckily, we were able to spend a considerable amount of the week learning about the basics of lichen anatomy, function, and field identification. I was surprised to learn that so many rock surfaces we encountered on our trips were nearly completely covered in lichen despite looking like bare rock at first glance This field course was outdoor experiential education in its purest form. Each day we woke up to a new adventure, and the camaraderie between the students and instructors in our small group of eight people created a conducive learning

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George Robert Ellison II
(December 15, 1941 – February 19, 2023)

It is with great sadness that we report the passing of George Ellison. Regular readers of *Chinquapin* may know George best through his "Botanical Excursions" column, which was a regular feature since the inaugural issue in 1993. However, George's contributions to our newsletter are just a small facet of his accomplishments as an author, journalist, poet, teacher, and conservationist.

This issue of *Chinquapin* was already in production when we received notice of George's death, and these comments have been added at the last moment. As it happened, we had already planned an article about George in the issue. The focus of that article would have been the award given to George at last spring's meeting of the Southern Appalachian Botanical Society, in Little Rock, Arkansas. The SABS members present at that meeting voted to approve a Resolution of Appreciation to George, which is reproduced below. George was not present at the meeting, but a framed copy of the resolution was later delivered to George by Dan Pittillo (former SABS President, former *Chinquapin* Editor, and a longtime friend). Dan reports that George was very surprised, thankful, and touched by the recognition from our society.

A full obituary is planned for the next issue of *Chinquapin*. In the meantime, readers are encouraged to view the tributes that have already been published in the *Asheville Citizen Times* (https://www.citizen-times.com/) and the *Smoky Mountain News* (https://smokymountainnews.com/), both of which included regular columns by George. Just enter "Ellison" in the search bar of either website.

SOUTHERN APPALACHIAN BOTANICAL SOCIETY RESOLUTION OF APPRECIATION

WHEREAS George Ellison, of Bryson City, North Carolina, has distinguished himself as a writer, naturalist, lecturer, and historian of the Southern Appalachian region; and

WHEREAS George Ellison has helped to educate the public of the Southern Appalachian region on topics related to natural history and conservation through his regular columns in newspapers and other media, along with workshops offered at multiple institutions in North Carolina and Tennessee; and

WHEREAS George Ellison has authored, edited, or contributed to many significant books, ranging from biography to essays to poetry, all relevant to the natural history of the Southern Appalachians; and

WHEREAS the work of George Ellison has been recognized with many awards, including Wild South's Roosevelt-Ashe Conservation Award for Outstanding Journalist in Conservation (2012); Blue Ridge Naturalist of the Year (2016); listing as one of the "100 Most Significant People in the History of Great Smoky Mountains National Park" (2016); and the Thomas Wolfe Memorial Literary Award for Back of Beyond: A Horace Kephart Biography (2019); and

WHEREAS George Ellison has contributed a regular column entitled "Botanical Excursions" to Chinquapin, The Newsletter of the Southern Appalachian Botanical Society, since the inaugural issue of the newsletter, and thus freely shared with the members of our society his observations, wisdom, and humor (coupled with the evocative artwork of his wife, Elizabeth Ellison);

THEREFORE, be it resolved that the Southern Appalachian Botanical Society confers upon George Ellison a Life Membership in the society, and expresses to him the sincere and abiding appreciation of the society and its members for his contributions to our society, to our discipline of botany, and to the Southern Appalachian region.

Approved by the Council of the Southern Appalachian Botanical Society on the 1st of February, 2022, and by a vote of the membership at the Annual Business Meeting in Little Rock, AR on the 1st of April, 2022.

Fifty Shades of Green: Homage to Kenneth Kent Mackenzie

By L. L. Gaddy, terra incognita

Carex (Cyperaceae) has more species than any other genus in both the Flora of North America (480) and the Flora of China (527). The mesic eastern deciduous forest in North America is particularly rich in carices; there the genus has radiated throughout the forest, invading every available niche, and speciating in such niches. A. E. Radford used to say that a good knowledge of the many species of *Carex* could help the botanist determine the concentration of calcium in the soil and even the pH of the soil. The many microhabitats in eastern North America made room for many species of *Carex*.

Another reason that there are so many carices in North America is Kenneth Kent Mackenzie (1877-1934). This "amateur" botanist and corporate lawyer (in New York City) was the ultimate devote' to *Carex*. Mr. Mackenzie lived only 57 years but described nearly 150 species of *Carex* (about 30 percent of all North American *Carex* known today) in his short life. He also compiled a two-volume folio edition, with full page line drawings, for the New York Botanical Garden of all the *Carex* known in the United States.

Mackenzie had a keen eye for morphological character differences in each species and a keener eye for the color green. In *Carex*, the blade or the leaf is, of course, usually green, but the degree and nature of its greenness varies considerably from species to species. The taxonomy of carices, therefore, is not for the color blind. And, as anyone who has done extensive fieldwork on *Carex* knows, the old dried pressed plants in the herbarium look nothing like the bright green plants you saw yesterday in the field.

In 1985, I found a large (25-60 cm tall) *Carex* in a rich cove along the Blue Ridge front of South Carolina in the calcareous Brevard Belt. Its wide blades (to 15 mm) were a bright, blue-green color that I had seen only in four or five species of sedge that I knew. Its size, color, and arrangement of perigynia (in Carex, a pergynial sac covers the seed and is used in identification of species) and its shape and number of *perigynia* narrowed it down to three species. I mulled over the taxon for several years, during which I found it in several other Brevard Belt coves. I came to the conclusion that it was closest to *Carex purpurifera,* which was found west of the Blue Ridge and had blade bases that were purplish. (Of course, *Carex purpurifera* Mack. had been described by guess who - K. K. Mackenzie - decades before my fieldwork.)

I submitted a short paper to a journal in the early 1990s; it was rejected. No one else in the entire world had seen this blue-green plant as a new species; maybe I was color blind. A few years passed and I received an email from one of the reviewers, a *Carex* expert from Michigan. One of his graduate students has seen the plant in South Carolina and had had the foresight to do a chromosome count. It had a different chromosome number than any of its close allies! The reviewer told me to resubmit with a key to related species. I reviewed books on color, color charts, and botanical guides (there are thousands of color names) trying to find the best name for the color of the blades of the new sedge. The best I could do was "Venetian blue." I named my sedge *Carex radfordii* in honor of Dr. A. E. Radford who had told me many years before that the Brevard Belt was relatively unexplored. It was published in 1995; it only took 10 years to convince myself and my peers that it was a new species.

After the publication of *Carex radfordii*, several botanists called and asked where was the best place to find it. I would tell them that they had probably walked by it many times. No, they would boast, no one could miss something that large. I told them to go down a familiar trail in spring and look for a big, blue-green sedge. I got many return calls to the effect of "I can't believe I have walked by that thing all my life" or "It was right there but I never saw it."They were looking for the wrong shade of green.

SABS Welcomes Our New Members

Aster Ayer
Lee Barker
Stephanie Briggs
Isaac Buabeng
Christina Carroll
Zackary Childers
Yoonjin Cho
Katherine Culatta
Cecelia Dailey
Chris DeFiore
George Ellison
Elizabeth Fleming
Joshua Fuller
Gregory Gilmore
Kandace Hollenbach
Rebecca Horn
Alan Huff
Donna Jacik
Alicia Jackson
Wyatt Jackson
Ennis James
Devani Jolman
Hannah Lilly
Jack Mayo
Mark McKnight
Gemma Milly
Jacob Murray
Laura Nichols
Jennifer Ogle
Matthew Parker
Marilyn Racine
Channing Richardson
Fisher Stines
Jeremy B. Stout
Heather Sullivan
Douglas Tuers
Lyle Wallace
Andrea Weeks
Joshua Williford
Clara Williams
Alex Yates

Botanical Brainteasers

By Joe Pollard and Janie Marlow

Our Brainteasers in the last issue [Chinquapin 28(4)] were: (A) *Pinus strobus*, eastern white pine; (B) *Magnolia fraseri*, Fraser magnolia; (C) *Picea rubens*, red spruce; (D) *Abies fraseri*, Fraser fir; and (E) *Juniperus virginiana,* eastern red cedar. The first four of these trees seem to have large cones, whereas the last one has fleshy, bluish "berries". But looks can be deceiving. Juniper "berries" are not fruits, but formed from fused, fleshy cone scales, whereas the "cone" of a magnolia actually is a fruit, specifically an aggregate of follicles, developed from the gynoecium of a single flower. *Magnolia fraseri* is the only angiosperm in the group, so it's the odd one out.

We received seven entries on this one, with the first five entries landing in the mailbox on the same day! The two most perfect answers of that initial rush came from Katharine Gregg and Sam Pratt, so we'll declare them joint winners of the contest for this issue. All the other answers were close to correct, too. Good job, everybody!

This Brainteaser concludes the four issues that made up Volume 28, so it's time to total up the points and declare a winner for 2021-22. It was an exciting race. Milo Pyne made a strong showing, winning two of the individual contests with perfect scores. But if our records are correct, he only submitted those two entries, whereas two other members played three times, and the scoring system rewards persistence. So we're pleased to announce that the winner is Katharine Gregg. Katharine will receive a prize of the new book by Lytton Musselman and Peter Schafran, *Edible Wild Plants of the Carolinas*. We'd also like to give honorable mention to Donna Ford-Werntz, who also submitted three entries, with a total score putting her in a strong second place.

Here's the first Brainteaser of Volume 29. Returning to a familiar format, here are five pictures of some spectacular flowers, but one of them really doesn't belong with the other four. Identify each species, and state which is the "odd one out", and why. Send your answers by email to joe_pollard@att.net (that's an underscore character between first and last names).

We'll award points for correct answers (and close guesses). At the end of the year, we'll total the points from all four issues and send a prize to the winner. To maximize your chances of winning, play regularly and don't be shy if you're not sure. There's always partial credit!

Color photos will be posted at https://sabs.us/publications/#chinquapin. [All photos by JK Marlow]

Send your answers to: **joe_pollard@att.net** (that's an underscore character between first and last names). Color photos that you can enlarge for a closer look are posted online at https://sabs.us/publications/#chinquapin.

Botanical Tour of Hawai`i Volcanoes National Park

By J. Christopher Havran, Campbell University

I have had the privilege to lead natural history field trips across the Hawaiian Islands. The flora of Hawai`i is composed of endemic and indigenous plants established through long-distance dispersal, Polynesian-introduced plants transported on canoes, and invasive species introduced by mistake or through deliberate human action. Each of these groups are distributed across a remarkable diversity of ecosystems extending from sandy coastlines through tropical dry forests to snow-capped mountains. My favorite way to introduce field trip participants to this diverse flora is to bring them to a place where the Hawaiian Islands and their ecosystems are most visibly growing and evolving: Hawai`i Volcanoes National Park (HVNP).

Hawai`i Volcanoes National Park consists of several units, with the one most familiar to tourists being located on the southeastern coast of Hawai`i's Big Island. While driving south on Highway 11 from Hilo, we feel our ears pop as we travel from sea level to 3750 feet in less than an hour.

Figure 1. Welcome sign for Hawai`i Volcanoes National Park dominated by *Metrosideros polymorpha*.

During the drive, the muggy air and strip malls in Hilo eventually give way to cool mist surrounding the tall stems of `Ōhi`a lehua (*Metrosideros polymorpha,* Myrtaceae) and the abundantly hairy fiddle heads of Hāpu`u pulu (*Cibotium glaucum*, Cibotiaceae), one of Hawai`i's tallest and most recognizable tree ferns.

Just beyond the park's main gates and visitor's center are Kūkamāhuākea and Ha′akulamanu: open steam vents and banks of sulfur. After sticking our faces in the steam pouring out of pits by the parking lot, we turn our attention to the nearby plants. Creeping along the edges of the steam vents is a large tangle of lime-colored compound leaves. This is uluhe (*Dicranopteris linearis*,Gleicheniaceae), an indigenous Hawaiian fern. This vine can cover large patches of land and is easily identifiable from long distances as a large patch of bright green leaves.

Fig 2. Two prominent Hawaiian ferns in HVNP. A stand of *Cibotium glaucum* (left) adjacent to *Dichranopteris linearis* (right)

A path from the steam vents leads to the caldera of Kīlauea, Hawai'i's most active volcano. This vast, multi-tiered caldera has recently expanded during a 2018 eruption and summit collapse. Dotted along the edge of the caldera floor, and extending up beyond the edges of the steam vents, we can see Hawai`i's most important tree species: `Ōhi`a lehua. The specific epithet describes the plastic morphology of this taxon: it can be short in boggy environments and a canopy tree in mesic and dry forests. Its flowers provide nectar for Hawai`i's endemic honeycreeper birds and its roots hold together the slopes of majestic cliffs. Unfortunately, this tree is currently threatened from Rapid `Ōhi`a Death, abbreviated ROD, a disease caused by the fungus *Ceratocystis*. Efforts are underway to preserve genetic diversity in `Ōhi`a and to educate the public about how to prevent transmission of the disease.

Figure 3. Flowers and shoot of *Metrosideros polymorpha.*

The best way to see the rest of HVNP is by driving down Chain of Craters Road to the Pacific, dropping 3500 feet in elevation as we go. The descending road takes us through alternating patches of *Metrosideros*-dominated mesic forest and seemingly-barren landscapes of lava from different volcanic eruptions. The volcanic substrate is a patchwork of rope-like pāhoehoe lava and dark, crumbly `a`ā lava. From a distance it appears as if these areas are as lifeless as a parking lot. Upon closer inspection, it is easy to see lichen and ferns growing in cracks of the lava, digesting their way through the substrate to make fresh soil for *Metrosideros* and other colonizers.

Eventually the canopy opens up and we are treated to views of sweeping cliffs sloping down to the Pacific. Driving down the cliffs, the landscape is covered with low-growing grasses intermixed with the indigenous `a`ali`i (*Dodonaea viscosa*, Sapindaceae). This small shrub produces inflated winged fruits, perfect for long-distance dispersal over vast oceans. It has colonized many Pacific island groups and is an important component of tropical dry forest ecosystems. Hawaiians used the fruits of *Dodonaea* in attractive leis.

Figure 4. The inflated and winged fruits of *Dodonaea viscosa* allow this species to travel far and wide across the Pacific.

At the bottom of Chain of Craters Road, we find ourselves at the top of steep sea cliffs. Peering over the side, we can see White-tailed Tropic Birds soaring above a foamy sea, with the occasional green sea turtle stripping algae off rocks. Atop the cliffs the vegetation is sparse and low-growing, constantly exposed to winds blowing in from the sea. *Lantana camara* (Verbenaceae), a common weed in the southeastern US, also grows as a noxious weed in Hawai`i. It is well-suited to the dry forest and coastal habitats across the islands. Its orange, yellow, and pink flowers are unfortunately not-uncommon along the coastal portion of Chain of Craters Road. Also conspicuous is the Polynesian-introduced Noni (*Morinda citrifolia*, Rubiaceae). Interspersed with the large dark green leaves of this shrub are bulbous multiple fruits in shades from green to translucent white. Although extremely foul-smelling, the plants were brought to Hawai`i by Polynesians for their medicinal properties. Noni juice, usually diluted with more pleasant tasting apple or grape juice, is still sold around the world for a variety of purported medicinal properties.

Figure 5. *Morinda citrifolia*, Noni, showing flowers and fruits in different stages of development.

Chain of Craters Road extends northwest through the park, eventually ending in a wall of lava that covered the road in the 1980s. By the time we reach this point, we've had a full day of botanizing across mesic forests, coastal ecosystems, and forests of different successional ages. We've also discussed the many ways that plants can disperse to new areas. Wind, water, and people have all contributed to the composition of Hawai`i's current flora. Heading back up the hill, we have a full dinner in the Crater Rim Cafe in the Kilauea Military Camp near the park entrance and discuss how the plants and ecosystems of Hawai`i Volcanoes National Park can set the stage for exploring all of Hawai`i's diverse ecosystems.

Credits and Acknowledgements

All photographs are by Forest and Kim Starr. Miles Thomas provided advice on the description of *Cibotium glaucum*. Donna Waldron provided additional advice on the topic.

In Memoriam

Steven Worth Leonard June 24, 1942-June 24, 2022

I met Steve Leonard when I came to Chapel Hill for graduate study in 1970. The first semester I was a student with him in Al Radford's floristic class. The geographic region was the Southeastern United States, a region defined ethnobotanically as the habitat where locals ate grits for breakfast, a food previously unknown to this Yankee. It only took one field trip to realize that Steve had more than a passing acquaintance with the flora and the food.

He was always ready to help locate plants I was studying or that I wanted to show my students. Steve was a fastidious field botanist, and it was usual for him to scout out the locality or localities where the plants of interest occurred before we arrived. This was particularly valuable with our work on *Isoetes*. On a visit to the quillwort haunts of southern Mississippi he came to our hotel armed with maps, directions, and notes on specimens. Best of all, he joined us (or should I say we joined him) in the field. He would tell us where to meet and upon arriving at the site, there was Steve sitting on the tailgate of his truck with his usual accoutrements—bib overalls, baseball cap, a walking stick, a Bausch and Lomb 10X hand lens and, of course, ample chewing tobacco. In the truck was a well-worn Flora of the Carolinas and plant presses.

Barreling into the swamp through mud and brush he would lead us to our quarry. Always prepared, he would have the requisite bags and digging tools we failed to bring. Having him in the field guaranteed collection of the material we were seeking. In addition to his botanical prowess, Steve was a gourmand and taught me a lot about southern cuisine.

His pound cakes were legendary (must use a Happy Home syrup) and his understanding of the taxonomy of BBQ astounding. Being a botanist from the Piedmont of North Carolina, he appreciated the phylogeny of this delicacy, always reminding us that non-vinegar-based BBQ sauces were derived. He defined the ecotone that separates the basal group from the tomato-based derivatives found further west. I use his East Carolina BBQ sauce recipe to this day.

In addition to flora and food, Steve was a remarkable poet. He regularly sent me poems about quillworts some of which were in the form of famous poems. One of my favorites is based on William Wordsworth, To the Moon. Using the name William Wortsworth, he described quillworts in the style of the poet. These poems displayed his appreciation of literature and his keen humor.

When I was a student at UNC, Radford took a class to the Sand Hills where, unknown to him, Steve had been a day or so before. When Radford and his class entered the pocosin they found a sign saying something to the effect "Welcome to Big Al and his class."

His story telling was always a delight--a Garrison Keillor of botany with an overtone of Flannery O'Connnor. His stories of being pursued by an atheist woman; or the time he got on the roof of his house and was overcome by a fear of heights—stuck there like a "fat pigeon" until he garnered the courage to go down the ladder; or how he disposed of cats--were memorable.

We shall miss this wonderful character, his botanical prowess, eagerness to help, appreciation of authentic BBQ and other southern food, and poetry.

(Contributed by Lytton John Musselman, Old Dominion University)

Thomas Lawrence Mellichamp
October 4, 1948-September 12, 2022

Our community has lost its ultimate "Plant Whisperer", Dr. Larry Mellichamp. Botanist, teacher, mentor, author, and creator, Larry had a phenomenal knowledge of the lives and growth of plants. He broke ground at the highest levels of botanical knowledge, and yet, also among the humblest of home gardens. He could convey to anyone which plant should go to which site and what that plant needed to flourish. He had a microscope at home and explored the hidden micro-world within that pond. After attending East Mecklenburg High School, he attended the new University of North Carolina at Charlotte, graduating with a bachelor's degree in the second graduating class. At UNC Charlotte he was quickly recognized by his biology professors as someone special, and he was given responsibility for the small teaching greenhouse and planted some of the first plants in what would later become the Botanical Gardens. He took field trips to the mountains and to the Green Swamp, where he first acquainted himself with carnivorous plants. This was the spark of the beginning of a life's work with these amazing plants. From there he went north to the University of Michigan in Ann Arbor for his PhD in Biology, working with the renowned fern expert, Dr. Herb Wagner. By observing the dynamic Dr. Wagner, Larry's teaching skills came naturally, and he shone in leading lab classes and was given the opportunity to teach continuing education classes, as well.

At the University of Michigan, he met his lifelong partner of 48 years, Audrey. Fate and talent conspired to bring Larry back to Charlotte. In 1976 he was offered an assistant professor position at his alma mater, UNC Charlotte. Here, over 39 years, he would become so much more than a talented professor and beloved teacher. Here he would take the reins of a ten-acre campus garden and transform it into a living laboratory, a beautiful garden, an incredibly diverse collection of plants from the Carolinas and around the world.

As the Director of the Botanical Gardens at UNC Charlotte, Larry brought the world of plants to people. His vision and drive to grow and share rare and fascinating plants, resulted in many "firsts" for Charlotte: a diverse orchid collection of species and hybrids, South African (and other desert) succulent room, carnivorous plant bogs, a dinosaur's garden with a life-size *Deinonychus* sculpture, and the first blooming of a Titan Arum in the Carolinas. His expertise ran both broad and deep. He was a central figure in the North Carolina Native Plant Society, and he understood the importance of our native flora for everyone, not just experts. Leading his Botanical Garden team, he created a first-of-its-kind native plant garden specifically designed for homeowners, and a native plants certificate program to educate and inspire the public. His popular books and talks further extended his reach and influence: *The Winter Garden*, *Bizarre Botanicals*, *Native Plants of the Southeast*, and *The Southeast Native Plant Primer*. As a professional taxonomist, he wrote the scientific treatises of dozens of species for the *Flora of North America*. He worked tirelessly for what he loved, and his efforts did not go unrecognized. He was most proud of winning the Association of Southeastern Biologists Teaching award, the Tom Dowd Award from the Cullowhee Native Plant Conference, the International Carnivorous Society Lifetime Achievement award, and the prestigious Flora Caroliniana award given for enthusiasm and service to the preservation, restoration, and appreciation of the natural world.

(Adapted from an obituary published by the Charlotte Observer)

Reports From Recipients *(continued from page 1)*

environment that fueled our inquisitiveness about our surroundings. I am so grateful to the Southern Appalachian Botanical Society for selecting me as a recipient of a John E. Fairey Field Station Scholarship; I will carry this experience with me for a lifetime.

Tropical Ferns and Lycophytes, Costa Rica

Noah Yawn, Auburn University

My first botanical love was *Sarracenia*, the North American pitcher plants. I did not think much of or about ferns. This changed two years ago when I met the charismatic fern-analog of *Sarracenia*, the Appalachian. This interest in ferns culminated in my participation on a 3 weeklong Organization for Tropical Studies course on Tropical Ferns and Lycophytes in Costa Rica this past June, which would not have been possible without the Fairey Field Station Scholarship. I am a first-generation college student and come from a low-income background, and to have participated in this course and been exposed to the tropics as an undergraduate student has been a true honor and privilege, but more importantly the individuals I met during those three weeks, represents one of the finest experiences of my life and academic career.

The course spanned three weeks solidly filled with everything ferns and lycophytes. We stayed at three research stations: Las Cruces Biological Station, a pre-montane forest research station in the southeastern region of the country and home to the renowned Wilson Botanical Gardens; Las Alturas Biological Station, near the Panama border and adjacent to the La Amistad International Biosphere Reserve; and La Selva Biological Station, a station that has been and is crucial to our understanding of tropical biology and ecology. Topics ranging from gametophyte ecophysiology, pteridophyte and lycophyte systematics, biology and reproduction, field ecology, field identification of neotropical genera, and pretty much anything else "fern" one can think of was discussed during the course. It was a shock, coming from Alabama, a state that is modest in its temperate fern tally, or even from the eastern USA, home to around 300 species of ferns and lycophytes, to witness the diversity of species, but moreover the diversity of biology, morphology, and physiology.

I think that perhaps the most important part of this course, aside from the opportunity to witness extraordinary biodiversity in even more extraordinary places, was how it affected me as a developing botanist and student. I will likely not see many of the fern and lycophyte genera I met on this course unless I return to the tropics; but however, the perspective this class offered has deepened my scientific interest and desire for understanding in a way that I'm certain will remain with me the rest of my career. Perhaps the most important aspect of the course was studying with a cohort of equally passionate and interested individuals and scientists from across the globe, united by their pure interest and passion for ferns and lycophytes. My sincerest thanks and appreciation are owed to the Southern Appalachian Botanical Society and the Fairey Field Station Scholarship an option for students pursuing the botanical sciences possible. I also owe thanks to my mentor, Dr. Bob Boyd for making this course a furthered possibility, as well as Dr. Emily Sessa for originally encouraging me to apply to the course.

Bryophytes, Highlands Biological Station

Yoonjin Chos, University of North Carolina, Chapel Hill

In 2022 Summer, I received the Fairey Field Station Scholarship to take the Bryophyte Identification course in the Highland Biological Station (HBS). Thanks to the award, I could have valuable time in the HBS, where I could enjoy the beautiful nature and learn a lot about Bryophytes. A great instructor Edward Schwartzman taught us how to observe, collect, and identify bryophytes using microscopes and identification keys. Last year, I got interested in bryophyte, and tried hard to identify them. However, I was always not sure whether I was doing correctly or not because there was no one who could help me. During this 5 day course, I could learn about bryophyte identification more than I had done during the last whole year. I was also overwhelmed by Edward's enthusiasm, and this encouraged me to work on bryophyte identification from eight in the morning to almost nine at night.

HBS was a perfect place to study Bryophytes. We could observe and collect hundreds of bryophytes just by walking around the HBS. I have never seen *Sphagnum* except in the plant store, but in HBS we could easily find it in the pond. I still remember the beautiful mat of mosses such as *Hypnum*, *Thuidium*, and *Mnium* that was covering the ground, and *Tetraphis* and *Neckara* covering the tree trunk. If I observe any tree bark (except for that of pine tree) with hand lens, I could find a lot of different leafy liverwort species, which fascinated me. Also, since the lab was located just next to the dorm, I could identify samples I collected until night. There were dissecting microscopes and light microscopes that I can use anytime, and many good references including "Mosses of Eastern North America (Crum and Anderson 1981)" and "Guide to the Liverworts of North Carolina (Hicks 1992)" The organized and detailed descriptions, drawings, and identification keys in the references helped me a lot when I was identifying the samples. We also went to the field trips to three other beautiful places including Glen Falls and Scaly Mountain. At those places, I could see other beautiful bryophytes. On the big rock under the sunlight, I could see *Andreaea* whose sporophyte splits into four like that of liverworts, and it was so fascinating that I knelt down to find more and more sporophytes. I saw *Rhodobryum roseum* that looks like a flower, and a hornwort called *Megaceros*. It was my first time to see any hornwort. I could see tons of bryophytes at the spray cliff of Glen Falls, where there was a constant spray of water. Then I could understand why a spray cliff is a perfect place for bryophytes to live. I was fortunate to study with other good people who are also really enthusiastic about learning. We always ask each other what species is this and discuss how to easily identify species. This way, I could learn more than what I would have done if I was studying alone. Since I was pursuing a career as a botanist, I believe that this experience will be a pivotal one to my career goal.

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Chinquapin, Castanea pumila, Blackwater Ecological Preserve. 14 June 2005

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