Chinquapin

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John E. Fairey Biological Field Station Scholarship Reports

Through the generous bequeathment of John Fairey, the Society supports students to attend field stations. It is one of the ways SABS is committed to supporting student botanical research. Here are the reports from last year's Fairey researchers.

Ellis Bosarge

For two weeks of July, I had the privilege of studying the forest ecosystems of the Southern Appalachians through fieldwork and classroom instruction. The course was offered by the Highlands Biological Station and supported by the Fairey Field Station Award.

While this course was called Forest Ecosystems of the Southern Appalachians, our instructors suggested a more accurate name would be Forested and Non-forested Plant Communities of the Southern Blue Ridge. Although the Blue Ridge is a part of the Southern Appalachian Mountains, the communities our class visited were mostly all located within this range.

The Southern Appalachians are renowned as one of the most biologically diverse regions in North America due to the biogeographical history of the Southeastern US. During the last Ice Age, glaciers advanced over much of the northern United States, but the Southern Appalachians lay south of this glacial boundary, providing refuge for countless plant and animal species that were displaced from the glaciated regions. Over time, the variations in topography and stable climate allowed these species to persist after the ice retreated, creating different forest ecosystems scattered throughout the range, and categorizing the Southern Appalachians as a hotspot for biodiversity, endemic species, and rare plants.

From rich cove forests with incredible herbaceous diversity, to the grassy balds, each hike reminded me that these forests are some of the most resilient ecosystems, each with their own set of unique ecological characteristics. Elevation, slope, aspect, and soil chemistry all shape community composition, often over short distances. Within an afternoon, we walked from an acidic cove forest dominated by *Betula lenta* and *Halesia tetraptera*, to a northern hardwood forest dominated by *Fagus grandifolia, Aesculus flava,* and *Carex pensylvanica,* transitioning into a heath bald dominated by *Rhododendron, Vaccinium, and Kalmia* species. These were gradients I had only previously seen in classroom lectures.

The course was led by Dr. Alan Weakley and Dr. Steph Jeffries, with support from guest lecturers. Every day consisted of a field trip to a distinct community type. Upon reaching the community, we would make observations, discuss the canopy layer, shrub layer, and herbaceous layer, slope, aspect, disturbance regime, hydrology, and elevation to profile the community we were in. Guest experts from

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the U.S. Forest Service and the Great Smoky Mountains National Park added to our visits with discussions about disturbance regimes, rare species, or distinct biogeographical features.

In the field, we learned to use a dichotomous key to get finer classification of the plant communities. We used Michael Schafale's *Fourth Approximation of the Classification of the Natural Communities of North Carolina.* This integrated vegetation and environmental factors and to define the community types. Working through the key in the field was much more memorable and valuable than a classroom exercise.

Several field trips stood out as particularly interesting:

Cove Hardwood Forests: At Joyce Kilmer Memorial Forest, we walked through old-growth cove forests. Towering *Liriodendron tulipifera* and *Tsuga canadensis* dominated the canopy and allowed us to get a glimpse of what some of the region's forest may have looked like before human disturbance and the introduction of invasive species.

Spruce-fir forests: Roan High Bluff allowed us to immerse ourselves into the windswept *Abies fraseri* and *Picea rubens* of typically more northern latitudes. Here, our discussions centered around climate change, which has pushed the species to be secluded on these high elevation summits, as the community type is continually threatened.

Granite Domes: In Panthertown Valley, we encountered massive granite domes which rise above the surrounding forest. The exposed rock face consists of thin soils, harsh sun and wind exposure, and extreme hydrology, and supports only sparse vegetation. In contrast to the Chestnut/Oak forested bases of the domes, which were dominated by *Gaylussacia ursina,* these communities provided striking examples of how geology and environmental stressors interact to shape plant communities.

Bogs and wetlands: From spray cliffs to seepage bogs, wetland sites emphasized the role of hydrology in structuring communities. We observed many carnivorous plants such as *Sarracenia purpurea* and *Drosera rotundifolia,* which allowed us to witness adaptations to nutrient-poor conditions. Other uncommon species such as *Rhynchospora alba* and *Parnassia asarifolia* signified the importance of conservation, as these unique species are secluded to these specific communities.

Beyond exhibiting the different community types of the Southern Appalachians, this course taught us how to "interpret the forest" through observations of the vegetation, hydrology, geology, and elevation. By the end of the course, I felt more confident not only identifying species, but also interpreting the broader ecological processes.

The course brought together students and instructors from diverse backgrounds. Our shared curiosity sparked discussions about plant diversity, plant community experiences, and lessons in biogeography. Each student was assigned an "expert topic," ranging from chestnut blight and hemlock woolly adelgid, to the ecology of old-growth forests. Preparing and leading discussions on these subjects helped to deepen my knowledge of the region's ecological history.

The most significant takeaway was a deeper understanding of the community gradients and the environmental conditions which create habitat for specific species. As someone interested in floristics and conservation, the course strengthened my ability to not only identify new species, but also identify indicator species and environmental indicators of certain plant communities. I left the course with a better understanding of habitat differences, and the challenges facing the Southern Appalachian forests in context of climate change, invasive species, and human disturbance. This course further inspired my wonder for these ecosystems. Standing on the grassy bald of Roan Mountain and under the spray cliffs of Dry Falls, I felt humbled by the persistence of these communities.

I am grateful to the Southern Appalachian Botanical Society for supporting my participation through the Fairey Field Station Award. This opportunity allowed me to experience the diversity of the Southern Appalachians and to grow as an ecologist.

Eli Harris

In June, I attended the Identification and Biology of Sedges course at Highlands Biological Station in Highlands, North Carolina. The

class was taught by Dr. Joey Shaw from the University of Tennessee at Chattanooga. It lasted five days and focused on the sedge family, Cyperaceae, with special attention on the genus *Carex*. I received support to attend through the Fairey Field Station Award from the Southern Appalachian Botanical Society, which gave me the chance to learn in both classroom and field settings. Sedges have always been a tough group of plants to work with, so this course helped me build skills that I can now apply to my research at Window Cliffs State Natural Area and to future work in botany and ecology.

The schedule was divided into lectures, lab sessions, and field trips. Each day began with lectures where we learned sedge terminology, morphology, and their ecological roles. Afterward, we spent time in the lab, working with specimens and practicing with keys. In the afternoons, we went out into the field to see sedges in their natural settings. That balance made it easier to connect the technical details with real-world observations.

On the first day, Dr. Shaw walked us through basic sedge morphology and terminology. Sedges are difficult because many species look alike and differ only in small traits. He emphasized characters such as the shape of the perigynium, how spikelets are arranged, sheath structures, and patterns in the inflorescence. Getting a handle on those features early was necessary since they are the foundation for working through a dichotomous key.

After the lecture, we went into the lab and examined herbarium specimens. Having preserved plants in front of us allowed us to carefully study details that can be easy to miss in the field. This was helpful because it gave me a chance to slow down, compare specimens, and become familiar with the key traits. This was one of the most valuable parts of the course because it broke down the learning process into manageable steps.

Much of the week was spent practicing with dichotomous keys. At first, it was slow going, since the terminology was still new and it was easy to get lost in the couplets. With more practice, though, the process became smoother. Dr. Shaw created a shared PowerPoint where students uploaded photographs of diagnostic features for different *Carex* species. These included images of leaf sheaths, perigynia, spikelets, and other structures. This tool gave us a visual guide we could refer back to, which reinforced the material. I found myself relying on it throughout the course, and it continues to be a helpful resource now.

The field trips tied everything together. On the first day, we visited the bog at Highlands Biological Station. Being able to apply the terminology and key characters while looking at live plants made the material click. Seeing sedges in their natural habitats showed how environmental factors can influence their growth and appearance. Later in the week, we visited several other sites in the Highlands area, each with its plant communities and sedge species. This variety gave us a chance to practice identification in different contexts and broadened the range of species we encountered.

One site that stood out to me was an Appalachian bog where *Sarracenia purpurea* (purple pitcher plant) grows. While the primary focus was on sedges, seeing the pitcher plants in their environment was a highlight. I had only seen them in books or photographs before, so it was memorable to see them in person and to understand the kind of habitat they require. This trip was also a reminder that studying sedges often means learning about entire ecosystems and the rare plants that depend on them. The course also stressed why sedges matter ecologically. They aren't just another difficult group of plants to identify—they play significant roles in wetlands. Sedges help shape wetland structure, influence hydrology, and provide habitat for many organisms.

For me, one of the biggest takeaways from this course was the improvement in my confidence. I've always struggled with the Cyperaceae family, mainly because of how subtle the differences are, the large number of genera, and because I hadn't had much direct experience with them in the field. This course gave me a chance to practice repeatedly, ask questions, and get direct feedback. By the end, I felt more capable of working with this group than I ever had before.

The skills I gained are already helpful in my work at Window Cliffs State Natural Area. Sedge identification is an essential part of floristic inventories and ecological surveys. Using keys more effectively and recognizing diagnostic traits will help improve the accuracy of the data I collect there. This, in turn, will strengthen the quality of my research and conservation assessments in the present and the future.

Looking forward, the experience will also help me in my career. Plant identification is a core skill for anyone working in botany, ecology, or conservation. Having more confidence in working with sedges will make me better prepared for future research and environmental projects. The chance to learn directly from Dr. Shaw and to study plants in unique ecosystems also deepened my understanding of biodiversity in the southern Appalachians. It reminded me of why I want to continue in this field and why protecting these habitats is so important.

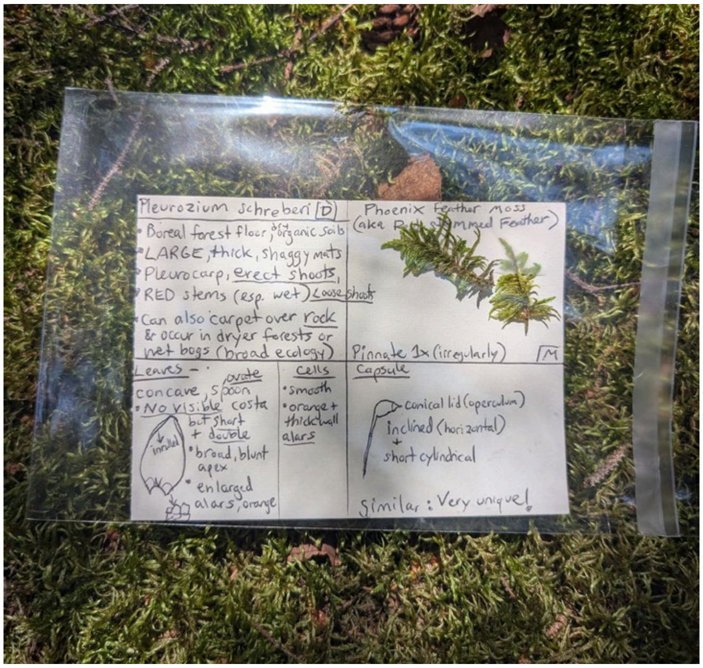
Overall, the Identification and Biology of Sedges course was a meaningful experience. It gave me practical tools, hands-on practice, and the opportunity to study plants in habitats I had never seen before. I'm thankful for the support of the Fairey Field Station Award and for the instruction and mentorship provided by Dr. Shaw. This course has left me with skills that I can apply immediately in my work and a stronger foundation to build on in the future.

Isabel Hildesheim

Mosses: Identification, Ecology, and Physiology, an Introduction to Maine Mosses was a wonderful five-day workshop led by Dr. Theresa Clark and hosted at the Eagle Hill Institute in Steuben, Maine. The goal of this workshop was to introduce students, educators, and nature enthusiasts to the basics of moss identification, ecology, and physiology through microscope work and field trips. Dr. Clark, a bryophyte ecologist and physiologist, guided us through these challenging topics while explaining her PhD and postdoctoral research as real-world examples of how such topics are incorporated into important conservation focused science.

We arrived eager to make new connections and expand our knowledge of mosses. The class included master naturalists, educators, graduate students, and botanists, all with varying levels of moss experience. Each day began with lecture accompanied by microscope observations of 10-15 moss species that Dr. Clark had collected that morning. These species were carefully selected to help us learn key diagnostic features and observe them in the lab before heading into the field. Dr. Clark used these clear examples to teach us specific morphological terminology in the lab. While this terminology was challenging to learn, it allowed us to effectively communicate what traits we observed in the field to help with our field identifications. The key morphological diagnostic features we learned were split into two groups: gametophytic, the dominant haploid generation, and sporophytic, non-dominant diploid generation. For the gametophyte we learned about the different leaf shapes, borders, and margins as well as two of the growth forms, acrocarp and pleurocarp. For the sporophyte, we learned about capsule orientation and shape, seta height, and emergent vs immersed growth forms.

Along with learning the key diagnostic features and terminology, Dr. Clark gave lectures on important aspects of moss reproduction, ecology, and physiology. We learned how mosses grow and reproduce as well as how the sporophyte develops. We also had a fascinating discussion on moss ecology that centered around moss community structures, competition, and life history. Dr. Clark then walked us through how to appropriately collect pertinent ecological field data. She strongly emphasized collecting microhabitat data as moss distribution relies heavily on microhabitat conditions. After our discussion on moss ecology we transitioned to moss physiology. Dr. Clark gave an intriguing lecture on desiccation tolerance in mosses. Compared to other plants, all mosses exhibit some level of desiccation tolerance, the ability to survive drought stress and recover once rehydrated. However, not all mosses have the same level of desiccation tolerance. *Syntrichia* and other desert species can experience multiple drying and rehydration cycles and survive while other more tropical species cannot. All mosses are poikilohydric, which means that their water content relies on the water content



of the atmosphere. Therefore, dryland or rock outcrop species are more likely to experience periods of drought and as a result tend to be better equipped to handle periods of desiccation. Mosses have several morphological and physiological mechanisms that allow them to survive desiccation including leaf curling, hair points, compact growth, heat dissipation, and protective sugars and proteins.

After lecture and microscope time in the morning, we spent most afternoons outside observing mosses in habitat and with our hand lenses. Dr. Clark had made cards describing the life history, morphology, substrate, and visible diagnostic features of the mosses that she would place with the example species outside. These cards made learning difficult species easier by recalling information we had learned in the lab. It also allowed us to work in small groups and leverage our understanding of the features together to observe those key features and growth forms in their natural habitat.

Three of the five trails we hiked were on the Eagle Hill campus. These trails offered a range of habitat types from boreal forest to coastal and even dry rock outcrops. One of our field trips was to a rock outcropping on the Eagle Hill campus. Here we were able to observe species that are able to handle living on dry, exposed rock including *Hedwigia ciliata, Andreaea rupestris, Pohlia wahlenbergii,* and *Polytrichum piliferum*. We observed some of the mechanisms of desiccation tolerance we talked about in lecture including short compact growth, sun tan pigments, and hyaline hair tips on their leaves.

Another Eagle Hill campus field trip was on a trail within a boreal forest where the tree composition was dominated by conifers. Here we were shown why microhabitat data, like pH and substrate are important. For instance, we were able to observe how different species prefer different substrates by taking note of how the community composition changed across microhabitats with varying pH. While on this trail, Dr. Clark gave an example of how to collect moss microhabitat data with a quadrat. She first displayed how to take photos of the quadrat to allow for appropriate data collection and habitat assessment and then we broke into groups to collect our own data.

The first off campus field trip was to the Tunk Mountain trail. We slowly hiked downhill to a stream surrounded by a forested wetland. Here we saw new species that prefer wetter microhabitats including *Sphagnum girghensonii, Mnium hornum, Plagiomnium cuspidatum* and *Fontinalis dalecarlica*. On the final day of the workshop, we went on our second off campus field trip to Petit Manon. Several species we saw throughout the week were present making this a wonderful review opportunity. This trail was particularly fascinating because many of the species we witnessed were very stressed, which allowed us to observe how the morphology of some species changes depending on their water content and level of ecological and physiological stress.

We wrapped up the workshop with a final group discussion of what we found the most helpful from the course. Some participants also presented quick lessons on a topic related to mosses they found particularly interesting. A few of the topics included carbon movement within mosses, anatomical variation, and how far moss sperm can travel. Overall, we enjoyed our time exploring the mosses of Maine and making new connections with like-minded individuals. I extend my gratitude to Dr. Clark and the Eagle Hill Institute for providing a wonderful workshop as well as The Southern Appalachian Botanical Society for supporting my attendance to this workshop through the Fairey Field Station Scholarship.

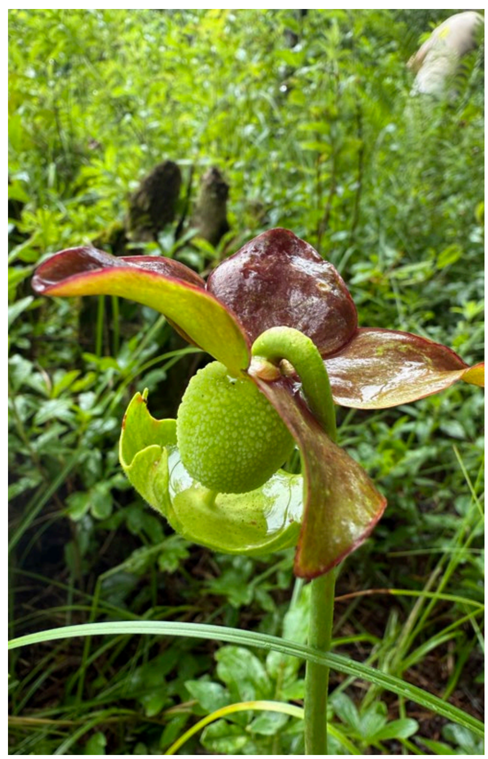
Sophia Sizer

This summer I had the opportunity to study the world of forest communities under the knowledgeable Alan Weakley and Stephanie Jeffries. The course consisted of daily excursions to various mountaintops, rich coves, and even some unassuming roadside cliff faces dotted with the most unique flora I have ever seen. Guest speakers from all walks of life joined us on our journey, giving us a glimpse into their respective worlds: Rob Cline, a fire ecologist describing the effects of flame, Laura Boggess, a cliff-climbing lichenologist from Mars Hill

university, and countless dedicated Forest Service members to whom we owe the greatest of thanks. As an undergraduate student just beginning my ecological journey, this course has given me a glimpse into the many different paths my passion for nature could lead, and it introduced me to an enthusiastic community of like-minded conservationists where my endless curiosity was more than encouraged.

Previous to this class, I had never been exposed to any kind of identification course, and I had very little knowledge on the world of taxonomy. The majority of my botanical training has been in the field of plant ecophysiology, and my comfort zone was within the eyepiece of a microscope; thus, I came into the class barely able to tell the difference between a white oak and a chestnut tree, knowing even less about herbaceous species. Even still, Weakley and Jeffries were patient as saints, and learning my species in the field rather than a classroom gave me a sense of personal investigation as I tried to remember all the little clues our mentors had provided. Not only were the plant names new to me, but the vast swaths of land we traveled were locations I never would have known the depths of had it not been for this course. I attend Appalachian State University, and while we have stunning views and hikes here in Boone, nothing I had seen before could compare to the sea of mountains you can gaze out atop Roan High Bluff, or the ancient looking granite domes of Panthertown Valley. We traveled all along the Southern Appalachians, and since the course was focused on different types of communities, we got some truly rare experiences that felt so different in contrast to one another. For example, on one day we hiked within the Joyce Kilmer Memorial Forest, a rich cove filled with old growth vegetation and gigantic trees, totally surrounded in an ethereal rainforest. The very next day we witnessed the effects of ultramafic rock in a serpentine barren, where the dry Mars-like red soils commanded that only the most adapted prairie grasses and aster could survive. The difference was undeniably striking, and while each site was so unique, it proved quite difficult to pinpoint exactly where along the road one community had switched to another if you didn't keep a close eye out the window. This distinction of communities was another skill that our class practiced throughout the week, but even as I tried my hand with my newfound identification skills, it proved to be almost intuitive in nature. I learned that careful consideration must be given to the bedrock type that created the soil, the dominant canopy species, the geographic qualities of the terrain, and countless other factors that provide context to the scene of the forest. Our class's most utilized botanical text was Mike Schafale's *Guide to the Natural Communities of North Carolina*, an extensive guide filled with descriptions and dichotomous keys that we used to distinguish forest community subtypes out in the field. Weakley and Jeffries guided us through the keys with expertise, all the while giving special mention to the simple fact that as much as we love to classify and itemize, the laws of nature do not bend to human will, and ultimately plants will grow wherever they see fit- that's what keeps botany so interesting!

You may wonder, like I had, what the ultimate purpose of classifying forest communities is, given that clear lines cannot always be drawn in a natural environment. As Alan Weakley explained, one purpose that stuck out to me is that of effective optimal conservation. There are some ecosystems that are so special and rare, and within them are some species only to be found in that community. By creating this system of community classifications, we can cast a broad net and hope to conserve and protect a great many spectacular species all in one fell swoop. In a time where conservation efforts are not given much needed support from government and legislation, it is imperative we be as mindfully judicial as possible with what we protect, in the hopes that these rare sights and species will inspire others to support future advances to protect this miraculous phenomenon we call Earth.



I could not help but admire the diverse array of my peers in the course as well. While I was the youngest at 20, there were some people around my age, up and coming ecologists and Forest Service employees, but also some many years my senior, retired professors and doctors, all of us with the same insatiable curiosity. I find that this aspect in particular encapsulates the wonderful thing about the Highlands Biological Station. No matter your age, experience, or where you call home, you are welcomed at the station just as much as anyone else. The vast array of courses offered ensures that anyone who is interested in any subject can find something that speaks to them, and undoubtedly will find fulfillment and education in their studies. I am endlessly grateful to the Fairey Field Station scholarship for providing me the opportunity to experience this wonderful course, and to the Highlands Biological Station for fostering such an enriching community of ecologists to educate and encourage my generation to continue exploring the mysteries of our natural world.

Earl Core Student Research Scholarship Report

SABS presents this award annually in honor of one of our founding members, Dr. Earl Core. This award provides up to $2000 in financial assistance in support of student research projects in plant taxonomy, systematics, and ecology.

Luke Sparreo

Investigating the Carnivorous North American Pitcher Plants *(Sarracenia)* and their Symbiotic Mites *(Sarraceniopus)*

Sarracenia is a genus of ≈11 species native to the eastern US and Canada, well-known for its charismatic pitcher structure and carnivorous capabilities, deriving nutrients from trapped prey. Aspects of the genus, such as the evolution and mechanisms of carnivory have been well-studied. Yet, many questions regarding the evolutionary history of *Sarracenia* are still unclear. One such area of obscurity is the evolutionary relationships of *Sarracenia*'s many pitcher-dwelling organisms, including members of the mite genus *Sarraceniopus*. *Sarraceniopus* mites are symbiotic, meaning they are ecologically closely associated with *Sarracenia.* In fact, these mites spend their entire life cycle inside of *Sarracenia* pitchers (Fashing, 2004). Despite *Sarracenia*'s usual carnivorous tendencies, the mites are not consumed by the plant. Instead, these mites dwell inside the pitchers and enjoy the benefits of consuming prey trapped by the plant. In return, *Sarraceniopus* mites assist the plant in nutrient cycling, accelerating the breakdown of prey.

Sarracenia and *Sarraceniopus* are a fascinating association that may be useful for understanding the evolution of plant-arthropod interactions. A major question in ecology and evolution is how, when, where, and why associations between species form (Thompson, 2005). However, since the description of *Sarraceniopus* as mites that dwell inside Sarraceniaceae plants (Fashing & OConnor, 1984), there has been very little work on the genus, let alone molecular study. In fact, most of the mite morphospecies remain undescribed (Naczi, 2018). In my PhD research, I plan to construct the first molecular phylogeny of *Sarraceniopus* and a phylogeny of its *Sarracenia* hosts. I will use these phylogenies to detect potential reciprocal selection between the plants and mites, as well as determine potential factors that may drive patterns in the plant-mite associations, such as geography, host morphology, or hybridization in plant hosts.

In my fieldwork enabled by the Earl Core Student Research Grant, I visited 34 field sites across 8 states in the southeastern US, the region of taxonomic diversity for *Sarracenia*. From North Carolina to Texas, I collected pitcher plants and mites, covering most of the species in the genus. Each day, after making field collections from wild populations of plants, I carefully examined pitchers for mite symbionts. Extracting mites from the interior of the pitchers, I preserved *Sarraceniopus* samples in ethanol. This work generated over 200 herbarium specimens, over 100 *Sarracenia* silica-dried samples for genetic analysis, and over 50 *Sarraceniopus* ethanol samples for morphological and genetic analysis. As I collected plant and mite genetic material from the same plants that will now be deposited in the herbarium at the New York Botanical Garden, these vouchers represent "extended specimens" that I hope will be useful for my own and others' work for years to come. In addition to collections, I shared field notes and voucher information with natural resource and conservation programs across the southeast, including rarely-visited sites. As the genus as a whole is threatened, I am hopeful that these updates supported the protection of *Sarracenia* and their associated organisms.

Since returning to the field, I have been working with three high school interns to develop an extraction protocol for the

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The Weakley Reader

What are common names for?

By: Alan Weakley

This may seem like such an obvious question to ask -- with a simple and obvious answer. But when I start trying to write out that simple answer, it gets complicated.

Surely one answer is to provide plants with more user-friendly "handles" for people interested in the plants around them, but intimidated by (or simply not interested in) scientific names. And all classification and naming is about identifying things by their similarities or relationships (putting them in a class or group), and then having a name that refers to that class, that we can use for communication with other people (and also in our own head as organization). We do this every day with everything around us – we classify and name foods, cars, buildings, clothes, music, materials – and plants!

As a kid and teenager, I learned many plants by common names, from my family and from the Peterson field guides, which treat common names as primary. Later, I started using floras, which treat scientific names as primary, but which generally do also include common names for a proportion of the species they include. Writing the Flora of the Southeastern United States over the past 35 years has given me a lot to think about regarding common names.

Simply put, common names are names in a modern spoken language (not Latin). Historically, "common names" are called that not because they are common rather than rare, but because they are names in the "common" language used by "common people," rather than the Latin names used by botanists, doctors, and priests (even before Linnaeus's codified system). In the past, such "true common names" were mostly based on resemblance of some part of the plant to some object used in daily life (like a coin), or its use of the plant as food, medicine, poison, or other use, or its similarity to another plant. These "true common names" were often connected to folk taxonomy (which might be very different from the standardized scientific taxonomy in use at a particular time). Common names developed organically, and one plant might have many common names, or if it was rare, obscure, or not obviously useful, no common name at all. Those common names might be jocular, nationalistic, racist, sexist, inaccurate, misleading, or parochial. "True common names" are often messy and problematic in various ways, coming out of human culture as they do; they are also fascinating and complicated in their connections to history, language, and plant uses and characteristics.

But over the last century, the idea has grown that each species of plant should have a common name, for use as an alternative to the scientific name. John Kartesz and John Thieret wrote a paper in 1991 entitled "Common names for vascular plants: guidelines for use and application", suggesting ways to standardize common names and proposing conventions for creating common names for species that do not have them. If common names are to be useful as a primary communication tool, they need to have a standardized meaning, with each name referring to one plant species (and only one plant species). And for each plant species to have a common name, and that name unique.

Thus, for common names to be strongly useful for communication, they have to be standardized, specific, and codified – or, put another way, they have to have some of the same characteristics as scientific names! Should we (and can we?) create a parallel universe in the English language that tracks scientific names?

Some point to "the bird people" as an example of what can be done. The American Ornithological Society (AOS) has a North American Classification Committee (NACC) which has responsibility for "arbitrating the official names of birds that occur within its area of geographic coverage. Scientific names used are in accordance with the International Code of Zoological Nomenclature (ICZN); the committee has no discretion to modify scientific names that adhere to ICZN rules. English names for species are developed and maintained in keeping with the following guidelines, which are used when forming English names for new or recently split species and when considering proposals to change established names for previously known species." See https://americanornithology.org/about/committees/nacc/guidelines-for-english-bird-names/ .

This all starts sounding a bit daunting. Guidelines, committees, 66 official supplements usually issued annually, and covering (as of the 66th Supplement) 2212 species (for North America, Central America, and the West Indies), each with an official common name in English and in French (but not Spanish?!). There are even standardized 4-letter "band or alpha codes" based on the (official) English Name, as well as 6-letter (Scientific Name) Alpha codes -- for each of the 2212 species. Would we want to go there with plants? One problem is simply that of scale. For North America, Central America, and the West Indies, the number of plants species is about thirty times the number of bird species. And the number of experts, specialists, and amateurs is probably fewer. Even for just the southeastern United States, we have over 11,000 native or naturalized plants.

Variously or all in combination, we want common names to be: unique and with a one-to-one relationship with a plant and its scientific name, what we grew up knowing, descriptive of the plant, memorable, short and easy to pronounce, inoffensive, accurate, reflecting the relationship of the plant, and retentive of history and language. It is clear that "true common names" and "standardized common names" are pulling in different directions and have some significant incompatibilities.

In Part II of this column (in the next issue) we'll explore some of the cross purposes and issues with common names, via examples! We'll also explore questions like:

1. Should every plant have a common name? Or is it okay that some rare and obscure plants have only a scientific name?
2. Should each common name be unique (applied to only one species)?
3. Should authors of floras create common names when there is no existing common name or it is "deficient" in some way (such as offensive or inaccurate)?
4. Should common names reflect "common" usage (what a "common person" calls a plant), rather than what is looked up in a book or website?
5. What about common names in other languages (like Spanish and French)?
6. Can we "decolonize" common names by adopting Native American names?
7. Are common names organic and variable through space and time, a product of culture? If so, should we accept names, from cultural usages that are inaccurate, bawdy, jocular, racist, or misogynistic?
8. Should common names be capitalized in writing? Are they proper nouns?

Brandon's Botanical Brainteasers

Vol 3.

By: Brandon Wheeler

Thanks to all folks that completed the brainteaser last time! We had two folks submit answers, both with all plants correctly identified but unfortunately neither quite got the theme I was seeking. This leaves Laura Nichols in the lead as our lone repeat answerer! Now that I've gotten on my feet, I'll keep standings to determine an annual winner and be sure to present said winner with a small, but heartfelt, prize! Leaderboard resets now, so it's anybody's game! The answers to the previous installment are:

1) ***Iris*** *verna*- Sandhill Iris (Iris = Greek Goddess of the Rainbow)

2) *Aralia spinosa*- **Hercules'** Club (is a sometimes-used name for this plant)

3) ***Zephyranthes*** *atamasco*- Atamasco Lily (Zephyr = Greek God of the Western Wind)

4) *Capnoides sempervirens*- Rock Harlequin

5) ***Asclepias*** *incarnata*- Swamp Milkweed (Asclepius is the Greek God of Medicine and Healing).

The outlier here is *Capnoides,* as the only one of the plants that doesn't reference the Greco-Roman Pantheon! Maybe this was a bit of a stretch, but hey we're all learning and improving (and submissions have doubled between attempts)! Full disclosure, *C. sempervirens* is one of my favorite plants, thanks in great part to the fantastic common name of Rock Harlequin, which neither of our intrepid answerers sent in! I quite enjoy species with pink and yellow coloration being given a common name that recognizes their gaudy nature (see *Lupinus stiversii* and *Hosackia gracilis* in California for some excellent examples).

That brings us to my third attempt at putting together a brainteaser. The rules, the same as always- below are five plants. Four are connected in some way, and the fifth is an outlier. Send the names of each of the plants, identify the one that doesn't quite fit, and let me know your guess on the theme. Submit your answers in the form of an email to branwhee@unc.edu or a postcard addressed to Brandon Wheeler Campus Box 3375 Chapel Hill, NC 27599-3375 (if you've sent a postcard, I haven't received it- please let me know so we can rectify the standings). If you'd like to see these photos enlarged, head to the Chinquapin archives on the SABS site for a .pdf of the newsletter. Given the recent difficulty in the theme, I'll offer up a hint- if you're struggling, head to the sports section of your local paper!

SABS 2026 Field Trip Report

Bon Secour National Wildlife Refuge and Weeks Bay National Estuarine Reserve

Article By: Zak Bartholomew
Illustration By: Erica Edinger

On March 28th, SABS members participated in a field trip to the Bon Secour National Wildlife Refuge and Weeks Bay National Estuarine Reserve as part of the Association of Southeastern Biologists Annual Meeting in Mobile, Alabama. We followed Dr. Wayne Morris from Troy University and Dr. Mac Alford from the University of Southern Mississippi as they led us on a botanical ramble exploring the spring offerings of the Gulf Coast.

Our journey began on the beach of the Bon Secour National Wildlife Refuge, which encompasses roughly 7,000 acres spanning coastal areas and pine-oak woodlands in southern Alabama. While we were briefly distracted by the ocean view, and by one photogenic crab, the promise of local flora turned our attention inland. We moved slowly (as most groups of botany enthusiasts are wont to do) up from the dunes to a cluster of live oaks. Dr. Morris and Dr. Alford pointed out two local scrub-oak species, myrtle oak (*Quercus myrtifolia*), and sand live oak (*Quercus geminata*), both of which were flowering. During the trip, there were several opportunities to compare the leaves and growth habits of myrtle oak, sand live oak, and later southern live oak (*Quercus virginiana*). Continuing into the coastal sand pine scrub, we observed seaside balm (*Conradina canescens*) in flower, the evergreen leaves of gopher apple (*Geobalanus oblongifolius*), and stopped to smell the fragrant leaves of Florida rosemary (*Ceratiola ericoides*).

We also stopped to explore the swale and freshwater pond habitats located behind the coastal dunes. However, due to recent drought conditions, the usually wet, shallow, water filled ponds lacked any standing water. While not ideal for these plant communities, it did allow us to more closely inspect several carnivorous plant species without getting our feet wet. These included pink sundews (*Drosera capillaris*) and horned bladderworts (*Utricularia cornuta*). Scattered throughout were the white flowerheads of Pipeworts / Ladie's Hatpins (*Eriocaulon compressum*). Despite the variety of emergent wetland plants to discover and identify, we eventually rallied to move on to the next field trip site, taking a short drive up the road to the Gator Lake trail.

The Gator Lake trail ends at the eponymous lake, and although we encountered none of the large reptiles, we did encounter even more plants native to the coastal sand pine scrub. At the start of the trail, we stopped to observe several sand pine (*Pinus clausa*) trees, a species whose serotinous cones have evolved to only open after large fire events. We also walked along sections of boardwalk above wetland areas (although dry on our visit). Dr. Morris pointed out the sharp margins of clumps of sawgrass (*Cladium jamaicense*). Some members of our group carried both a hand lens and a pair of binoculars, and both instruments came in handy. Those with binoculars became quite popular after a few Great Horned owlets were spotted nesting in the branches of a pine. We followed the sandy trail for almost half a mile until we reached the shrub-lined shores of Gator Lake. Here we saw the pinkish veined leaves of the sandhill milkweed (*Asclepias humistrata*). A sharp-eyed student also spotted what the group identified as coastal plain wireplant (*Stipulicida setacea*). The green branching stems and tiny flowers of this small plant were best observed through a hand lens. Both the milkweed and wireplant were growing directly through the white sands of this coastal scrub habitat. Walking back along the trail we stopped to say goodbye to the owlets before returning to the cars.

Our final stop within the wildlife refuge was the Pine Beach trail. Here, we briefly stopped our botanizing to have lunch under the arching branches of the southern live oaks shading the parking area. Festoons of Spanish moss (*Tillandsia usneoides*) hung down from their sprawling branches, and before starting our hike we looked for signs of the small pale-green flowers along the gray-green tendrils that were within reach, but none were flowering. The Pine Beach trail was a single lane sandy-dirt road that led us into maritime hammock plant communities with some pockets of coastal sand pine scrub. We hiked out about a 1/3 of a mile to a large wetland pond area, but like all the freshwater ponds we encountered, it was also dry. However, glimpses of the pond's true watery habitat remained, as we noted scattered white waterlily (*Nymphaea odorata*) leaves breaking through the surface. After perusing the dry pond-bed for a while, we returned to the shady live oak parking area and then loaded up for a drive north along the bay to the Weeks Bay Pitcher Plant Bog.

At the bog, we were greeted by a large and colorful 'Weeks Bay Pitcher Plant Bog' wooden sign. We walked onto a raised boardwalk and a short while later were greeted by the first of many *Sarracenia* flowers. Their dark red, almost purplish flower heads suspended at the end of long light green peduncles. As we moved along the boardwalk past the first few solitary flowers, we eventually started to see them in larger patches. In those areas, their flowers stood out from the surrounding vegetation like little red lanterns with open sides. The *Sarracenia* flowers appear before the emergence of their pitchers, a wise strategy to ensure their pollinators don't also fall prey to their traps. With a little patience and keen eyes, we were also able to pick out tiny sundews tucked beneath the grassy species that lined the boardwalk. The bog was also showing evidence of drought, with no signs of standing water. The boardwalk led us into a shadier wooded area where the pitcher plants gave way to plentiful fern species, like royal fern (*Osmunda spectabilis*) and cinnamon fern (*Osmundastrum cinnamomeum*). At the end of the boardwalk there was a small observation deck overlooking the Fish River. From this point we could look south to where the Fish River emptied into Weeks Bay, which eventually joins Bon Secour Bay even further south.

As we made our way out of the bog, we bade farewell to the pitcher plants and their flowers, soaking in the sun and warm weather before beginning our travels home. For many in the group it was their first time visiting the plant communities of southern Alabama. As plant enthusiasts, it is always exciting to be introduced to new plants who are members of familiar plant families from your area. It's also a gift to experience these places with knowledgeable field trip leaders like Dr. Wayne Morris and Dr. Mac Alford. Thanks to this field trip, we now have a plethora of plant species to revisit on our next trip to Alabama and the Gulf Coast.

Editorial Notes

This is my last issue serving in an editorial capacity and I've prepared this issue jointly with our new editor, Dr. Chris Havran of Campbell University. It has been a pleasure to serve as editor of our newsletter and thank all of you for your help. I am especially pleased that we are highlighting the results of our student award research. These young people are the future, not only of our newsletter but of botany.

Thanks to all of you.

As we move to a new editor, I want to tell you something about the wonderful opportunity that we have. Chris Havran has been involved in Southeastern Botany for several years and has served as president of the Association of Southeastern Biologists and, no doubt, in other organizations as well. We have somebody with commitment to our organization, great experience, and a vision for the future. On behalf of all of us in SABS, I want to welcome Chris as our new editor. I thank all of you for your support for him as well as myself.

Plantfully,
Lytton John Musselman

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Earl Core Scholarship Report *(continued)*

Sarraceniopus mites. As most morphospecies are undescribed, I am focused on creating a method that extracts DNA from pierced mites while preserving the exoskeleton as a voucher for slide mounting and morphological identification. While methods exist for similar work in other arthropods, *Sarraceniopus* is especially small (<1mm), requiring a specialized protocol. I have also been working with my interns on science communication, developing a blog post about plant-mite interactions. Additionally, I have completed successful DNA extraction from 72 *Sarracenia* samples.

I will return to the southeast to complete my fieldwork this upcoming summer, collecting plants and mites from the remaining taxonomic gaps. I am currently working on securing additional funding for the sequencing of my on-hand and future collections. My next priority will be to begin conducting cophylogenetic analyses on the new plant and mite phylogenies. These analyses will test biological hypotheses by revealing cophylogenetic patterns. One such hypothesis I hope to test is the hybrid bridge hypothesis, an underexplored proposal that host hybrid swarming may lead to frequent host switching in symbionts (Floate & Whitham, 1993). In this case, widespread hybridization may reduce observable cophylogenetic patterns. Yet, other factors may contradict the hybrid bridge hypothesis. For example, *Sarracenia* hybrids may be less biologically fit than pure species due to intermediate pitcher shapes, meaning hybrids serve as ineffective "bridges" to facilitate host switching.

I am incredibly grateful for the opportunities afforded to me by the Earl Core Student Research Grant, and look forward to providing updates on my work as I continue to develop my thesis work.

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