

CHINQUAPIN

THE NEWSLETTER OF THE
SOUTHERN APPALACHIAN BOTANICAL SOCIETY

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SABS MEMBERSHIP DRIVE

If you are reading Chinquapin there's a good chance you're already a member of the Southern Appalachian Botanical Society, and hopefully you find your membership to be helpful and rewarding. However, membership in SABS has been steadily declining. Our decreasing membership base, now at about 420, has been a concern to SABS Council members for a decade or more. We ask that you help us spread the word about the benefits of membership in SABS to a new generation of botanists, including students, young faculty members, and anyone with a professional or amateur interest in plant science. We also need to remind former members who have not renewed about the advantages of membership in our Society.

The box below summarizes many of the benefits of SABS membership. Please talk it up to your colleagues. Feel free to photocopy this page and give it to potential members. Consider giving your students a gift of membership – it

shows you respect their potential as a professional botanist, and it only costs \$20 per student membership.

We can only make this work with the help of existing members, so we are offering this incentive: **RECRUIT FOUR NEW MEMBERS AND RECEIVE A YEAR'S MEMBERSHIP FREE.** Here's how it works. Get four people to join SABS, either by convincing them of the advantages or by giving it as a gift. Then, when you send in your own renewal, enclose a note giving the names of the four (4) new members you recruited. We will cross-check to make sure that the recruits you claimed have indeed begun a new SABS membership. If so, we'll extend your membership (online only) for a year at no cost. This offer is valid until March 30, 2014.

Membership forms available at: <http://sabs.appstate.edu/membership>

WHY SHOULD YOU BE A MEMBER OF THE SOUTHERN APPALACHIAN BOTANICAL SOCIETY?

- **Networking.** Opportunities to develop a network of colleagues with similar interests, potential collaborators, seminar speakers, and friends in a collegial society.
- **Service for a National Organization.** Opportunities to function in a service role by promoting botany in the eastern United States, gaining experience in the Society's publications, annual meetings, and awards activities.
- **Publication.** Twelve free pages per year in *Castanea*, our quarterly published journal and an excellent outlet for disseminating scientific research. SABS Membership automatically includes online access to all issues of *Castanea* (print subscriptions also available).
- **Annual Meeting.** A multi-disciplinary meeting, hosted jointly with the Association of Southeastern Biologists, which is held locally in the Southeast and provides a professional and friendly venue to present research. A great opportunity for students to hone their presentation skills and for professors to recruit potential graduate students.
- **Student support.** Opportunities for financial support of student research via the Core Research Award and annual awards for best presentations.
- **History.** SABS has supported botanical research in the Southeast since 1935. If you study botany in our region, you should be a part of that rich tradition!

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From The Editor's Desk:

Joe Pollard, Newsletter Editor

In this issue, the SABS Council announces a drive to recruit new members for our society. There are many ways that you can help. First and foremost, be sure you have renewed your own membership. Beyond that, please encourage others with botanical interests to join. But I'm choosing to use this space to promote another idea – gift memberships. An SABS membership can make a great gift for a botany student you know. If a mentor gives their student a membership in a learned society, it is a sign of how much you respect their current scholarship and promising career. And it's an investment in the future of SABS, because many of those same students will choose to remain members.

There's another advantage, but it's a secret, so STUDENTS ARE NOT ALLOWED TO READ THIS PARAGRAPH! Okay, are you sure your students aren't peeking? Here's the deal – in this current membership drive, a gift membership for a student is a ridiculously cheap gift. Recruit four new members and receive a year's free membership for yourself. Let's say that like me, you are a regular member of SABS and

you read *Castanea* online, so your annual membership dues are \$45. Student memberships are only \$20, so if you give four of them that will cost you \$80, but then you save the \$45 you were going to be spending anyway. So the net cost of those four memberships is really only \$35. After you have signed up your students, just send in a dues notice for yourself with a note of the students' names, and your own dues will be free. Your students will think you are really wise and generous, but in fact you only spent \$8.75 on each student. What a deal!

Okay, students can read again. Generous and wise mentors can give memberships to their students by simply mailing in membership application forms with the students' names, along with a check. If necessary, get an advisor or department chair to sign the form confirming their student status (perhaps you can do that yourself). Send your students a nice botanical greeting card to tell them about their fantastic gift. I'm definitely planning to do this. I challenge all my faculty colleagues to do the same – surely you know four promising botany students. I'm not sure you'll get this *Chinquapin* in time to read this suggestion before the holidays, but belated gifts are appreciated too. Let's get those SABS membership rolls back on an upward trajectory!

“Most of the plants are very desirable to me. Avoid sending scraps. Make the specimens as perfect as you can, roots, flowers & leaves & you can't do wrong. In large ferns & leaves fold them back upon themselves on one side of the specimen & they will get into a proper sized paper. Don't trouble yourself to stitch them [to the paper] – for [they] really travel better without it, and a single label per month to those of the same place is enough except that you have plenty of spare time or spare hands to write more.”

J. S. Henslow, writing to Charles Darwin during the voyage of the *Beagle*. Cited in D. M. Porter, 1986, Charles Darwin's vascular plant specimens from the voyage of HMS *Beagle*, *Botanical Journal of the Linnean Society* 93:1-172.

Senna Seymeria

By Lytton John Musselman, Old Dominion University

Seymeria is a genus of yellow flowered hemiparasites of the broomrape family (Orobanchaceae) with two species in the Southeastern United States. *Senna seymeria*, *Seymeria cassioides*, is widely distributed throughout the Southeast, chiefly in the Coastal Plain in pine forests but also with outlier populations in the Appalachians. The common name is intriguing—I don't understand how the plant resembles the legume senna. *Senna seymeria* has small, pinnately lobed leaves distinguishing it from the other species in the South, *S. pectinata* (combleaf seymeria) occurring from the Gulf Coastal Plain and northern Florida to southern North Carolina. *Seymeria pectinata* has pectinate (comb-like) leaves in contrast to the threadlike leaf divisions of *senna seymeria*. The hosts of the two species also differ—*senna seymeria* is essentially restricted to pines, *S. pectinata* has a broader host selection. *Senna seymeria* has anthers that open by apical pores rather than slits, an unusual feature in the family.

In the late 1960's *senna seymeria* became a serious problem in some plantations of young pines in the south perhaps because of tree planting in sites formerly considered marginal for growing



FIG. 1. Flower branch. The lemon yellow corollas last one day. The distinctive leaves are evident lower left.

trees. In the early 1970's I was asked by the Southern Forest Experiment Station of the U S Forest Service to test host specificity. I did this in pot culture where *senna seymeria* parasitized several pines, including white pine with which it would not be associated in nature, and a diversity of hardwoods. Extensive surveys confirmed that in nature it is restricted to pines. Like other hemiparasitic Orobanchaceae, it forms a host connection via specialized roots called haustoria that often are borne on the host root in rows (Fig. 2).

The predilection for pines has resulted in *senna seymeria* being the only native root parasite with documented economic damage to tree plantations. I worked with the Union Camp Corporation (now International Paper) at a slash pine (*Pinus elliotii*) plantation in coastal Georgia where several acres of young pines were being killed



FIG. 2. *Senna seymeria* haustoria—globose in shape and lighter in color than the root of the host, pond pine (*Pinus serotina*), South Quay Sand Hill State Natural Area, Suffolk, Virginia.

by the parasite (Figure Three). A native root parasite damaging a native tree, albeit under plantation conditions, is unique in North American forestry.

The pores on the anthers raised questions about pollination. How does the pollinator obtain pollen? To answer that, we studied several populations in North Carolina and found that bees are the most common floral visitors. The insect weight is sufficient to bend the flower stalk enough to dump pollen from pores on to the insect.

An annual that matures in late summer with masses of small yellow flowers, *senna seymeria* produces onion-domed capsules in late autumn. These small fruits are filled with tiny seeds that are apparently wind or water distributed. This year, 2013, has been a banner year for this parasite with the largest populations I have seen in decades. One explanation is rain exposing pine roots, facilitating haustorial attachment by the parasite.



Fig. 3. Slash pine plantation west of Savannah, Georgia. Trees are estimated to be between five and ten years old. The pines in the middle of the picture have been killed or stunted, those on the right are the same age but uninfested.

BOTANICAL EXCURSIONS

“A Traveller in Little Things” – Journaling & Nature Writing

By George Ellison

My favorite English nature writer W.H. Hudson (1841-1922) once composed a book titled “A Traveller in Little Things” (1921). It’s one of my favorite books. He provided an explanation for the curious title in his opening chapter.

In an inn at which he was lodging, Hudson encountered a “superior” gentleman from the business world, who explained that he was “a traveller in something very large.” The businessman determined after a summary inspection that Hudson was obviously “a traveller in little things -- in something very small.”

Hudson did not mind that “label” at all; indeed, he found it “something to be grateful for.” He knew that learning to pay attention to little things is, after all, a talent worth cultivating. And he fully agreed with Charles Dickens that a given life is, in the final analysis, “a summation of trifles.” Journal keeping is just that. It’s an endeavor that allows a person to record and retain the loose particles -- the detritus -- from which a life emerges.

Some of my favorite books are personal nature journals that have been published. Thoreau’s journal entries can be stimulating in small doses, but they are often too acerbic, too opinionated, too grand for my taste. More to my liking are those informed by quiet observation by writers like Edwin

Way Teale. Here are some December journal entries culled from Teale’s “Circle of the Seasons” (1953):

- “On a dark December day like this, there is a special pleasure in thumbing through books of botany. They bring back the perfumes and colors of the flowers of spring.”

- “I see one lichen spreading across the surface of a small stone and it reminds me of the amazing relationship between rocks and lichens. Some of these plants, so frail they can be crushed between a thumb and forefinger, are able to dissolve granite. They produce rock-etching acids that eat out tiny pits and depressions in the stone, thus enabling the threads of lichens to strengthen their holds on boulders and cliffs ... It is the crystalline form of these acids, incidentally, that is responsible for the red and orange and silver and yellow hues that make brilliant the most colorful species of the lichens.”

- “The smell of the coming snow is in the air.”

- “The cat sleeps with its ears awake.”

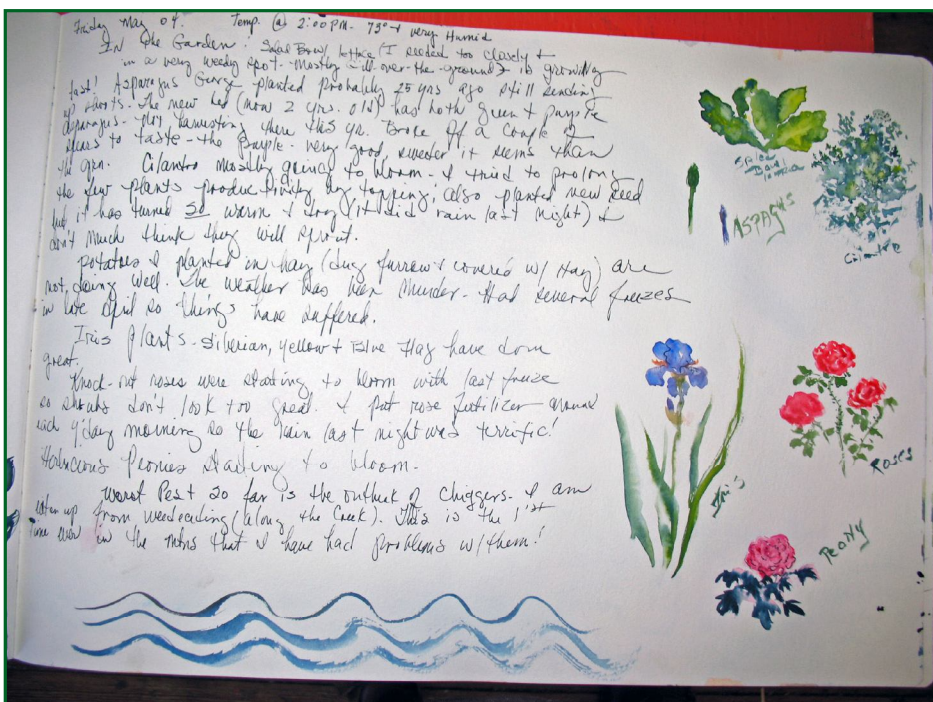
- “William T. Davis once showed me some of the unpublished things he had written. I remember two eloquent sentences that express the whole outlook of his life. ‘There is no need of a faraway fairyland,’ he wrote, ‘for the earth is a mystery before us. The cowpaths lead to mysterious fields.’”

- “Last sunset, last twilight, last stars of December. And so this year comes to an end, a year rich in the small, everyday events of the earth, as all years are for those who find a delight in simple things.”

Keeping a personal record of what one observes in the natural world can be either a chore or a pleasure, depending on the approach used. There’s no set way to keep a nature journal.

Everybody has to contrive by trial and error what works and doesn’t work on an individual level. The main objective is to record in an economical manner the “facts” and “impressions” you wish to retain for future reference. The very process of maintaining a record helps one pay closer attention in an ongoing manner, day-to-day and year-to-year.

And the act of writing or sketching assists in sorting out images and impressions. What seems mundane -- even trivial -- at the time of recording, often becomes significant in retrospect. In most instances, it’s “a lot better than nothing,”



Samples from Elizabeth Ellison’s journal, including sketches and watercolors.

Journaling continued on Page 31

Using digital flashcards to learn plant names and characteristics

By Daniel M. McNair
Graduate Research Assistant
University of Southern Mississippi

In plant taxonomy, local flora, and botany courses, students are usually expected to learn the scientific names of a significant number of plant species, genera, and families. I have often observed students using PowerPoint slide-shows to master the names and characters needed to do well on their practical exams. They create one slide with a picture or illustration of the plant and the next slide with the corresponding name. Then they cycle through their PowerPoint slideshow as if it were a set of flashcards. Obviously, this system works for many people, or it would not be so popular. The disadvantage of this method, however, is that the order and number of the “flash cards” presented to the student remain the same unless the student manually rearranges the

slides or deletes the ones that he/she has mastered. A few students work around this problem by printing their slideshows and manually shuffling and later removing cards. Still, the cost and time required for printing so many photos may be prohibitive for some.

Only occasionally do I still see students using handwritten index cards for learning the scientific names of plants. When they do use this method, they have usually been creative enough to include their own illustrations. This can be an engaging way to learn, but student illustrations can also fail to capture a species’s characteristics as well as a photograph or professional illustration. The significant advantage of traditional, hardcopy flashcards is that cards may be added, removed, and shuffled easily. This brings us to digital flashcards, which I think incorporate the best aspects of the methods mentioned above.

Digital flashcards have been around for more than a decade, but many students and educators may be unaware of the free online services that allow for the creation, customization, and sharing of digital flashcards. The service I have found the most useful for myself and fellow students is made possible by www.brainscape.com.^{*} Once a deck is created from the website, the user selects the “Study Deck” option, which shows the front of each card with a picture of the plant and its name on the back. The back of each card will ask the student, “How well did you know this?” and he/she will assign a confidence rating from 1 to 5. Cards rated with low confidence will cycle through very often while cards rated highly will cycle through only occasionally. These confidence ratings are assessed each time the student views the back of the card to check his/her answer. There is also a bookmark feature (star icon in Figure 1 and 2) that allows the user, as he/she is studying a deck, to group

troublesome cards together into a separate deck for further study. I shared several of the Brainscape flashcard decks I have created with fellow graduate and undergraduate students; they have since told me that they could not imagine studying without Brainscape and have begun making their own decks.

To begin making digital flashcards, create a free account at www.brainscape.com, then select “Create” to start setting up subjects, decks within those subjects, and individual cards. With the “Advanced Editor” you can use your own photos or photos acquired online. Create a file of pictures on your computer then upload them in the Brainscape editor as you create each card. For now, the mobile app (Figure 1 and 2) is available only on Apple devices, but the cards may be studied easily from the website itself.

**Full disclosure: I am not associated with www.brainscape.com in any capacity.*



Figure 1. Front of flashcard, from Brainscape app, available on Apple devices (photo courtesy of John Gwaltney, www.southeasternflora.com)

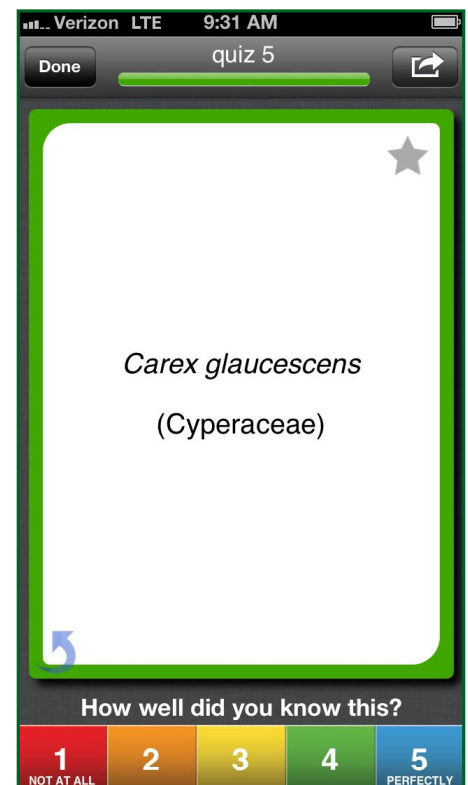


Figure 2. Back of flashcard.

Mystery Plants

By J. Dan Pittillo

This year we have been relating our native Southern Appalachian plants with some from elsewhere. For the last issue two readers submitted responses. Young Rudi Boekschoten not only determined which were in SA but also identified the correct species: 1) *Lobelia puberula*, 2) *Rhododendron perichlymenoides*, 3) *Rhododendron catawbiense*, 4) *Platanthera peramoena* and 5) the tropical *Heliconia*, which I photographed in Costa Rica. Georgia Hall continues to get them right, with three more of SA and the other elsewhere.

For you field ecology and tree-familiar botanists, see if you don't recognize which of these are photographed in the SA and which are tropical species (but with other members of the genus in the SA). Let's keep this to only this year's effort to win the prize Judy Dumke has offered: Kristin Johannsen's Ginseng Dreams, the Secret World of America's Most Valuable Plant to the winner. Pick out the correct one (or more) species that is native to the defined Southern Appalachians. I'll announce the top challenger in the following issue.

There comes a time when it is prudent to pass on the gauntlet. I've immensely enjoyed interacting with this fine organization and the many botanical friends I've met through this newsletter. I may not be completely absent as I'll probably submit some thoughts from time to time in the future. I encourage you to thank Joe Pollard and all those contributors, especially George Ellison who continues the "Botanical Excursions." We all gain by the interaction with members.

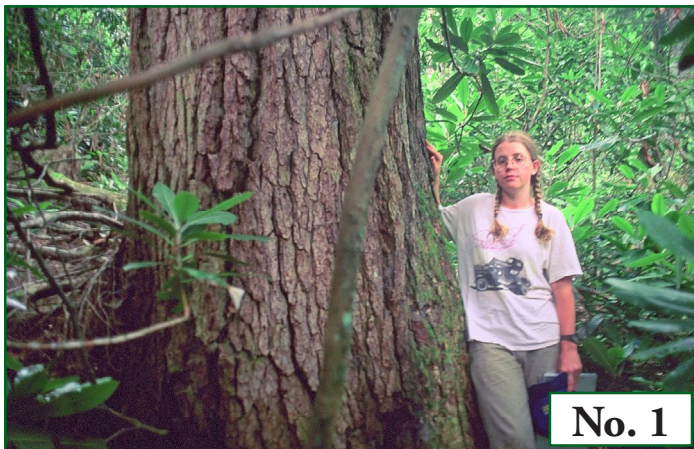
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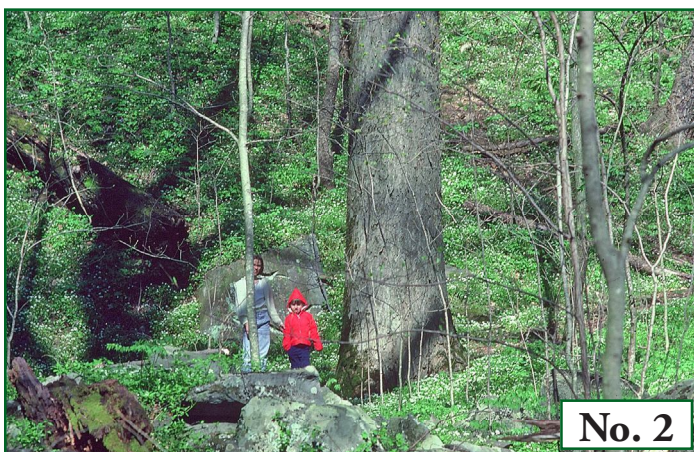
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No. 4



No. 1



No. 2



No. 5

Journaling continued from Page 28

and in some instances brief notes can resonate with meaning and experience, bringing back places, smells and experiences that would otherwise be lost forever.

My own record keeping takes place in four sorts of ways. First, I use printed checklists to record in a systematic manner plants and animals seen each year or season, particularly birds. The Great Smoky Mountains Natural History Association has recently issued a series of checklists for mammals, birds, trees, shrubs, vines, wildflowers, and ferns that are just the ticket. One of the most satisfactory undertakings I know of is recording the plants and birds observed through the years in one's county, community or backyard.

When out walking, I try to remember to take along a 4"x-7" Level Book of the sort used by surveyors or engineers. This field notebook slips easily into a pocket, providing space for quick field notes or rough sketches. Usually I just list things seen, having learned the hard way that my memory bank is an unreliable storage system.

My primary "Nature Journal" is an appointment book that provides a 7-line entry space for each day. Seven lines is generally more than enough to record a day's worth of experience. A lot of space on a page can be intimidating. Lots of days in this journal have entries like "Sick, didn't get out" or "NH" for "nothing happened." These reflect reality, and they also serve the purpose of keeping the journal entry process rolling. Other days are filled to the brim with entries that overflow into the margins.

Finally, this space is also a good place to record quotations garnered from printed sources that originated as journal entries. I find this quotation from Cathy Johnson's "On Becoming Lost: A Naturalist's Search for Meaning" recorded in my journal on Jan. 12: "Being lost is not a negative concept ... (it) simply means we are wandering.... As a naturalist, wandering is what I do best; it's my stock in trade.... Awareness must be the most difficult state of all to achieve.... I would spin right off the edge of the world if I hadn't cast my

anchor in nature."

I don't try to incorporate fancy writing of my own into the journal. That'd be too much trouble on a daily basis. Indeed, most of the notations are in a shorthand of my own devising that another person would have difficulty making sense of. They're strictly for my consumption and use, a way of making sense of the world on an individual level.

For some time I tried to restrict entries to natural history observations, but it's become clear that the world is not so easily compartmentalized. Work and family are a part of the "natural" world. War and politics are eternal. But I do try to remember that what I'm keeping is a nature journal, not a diary.

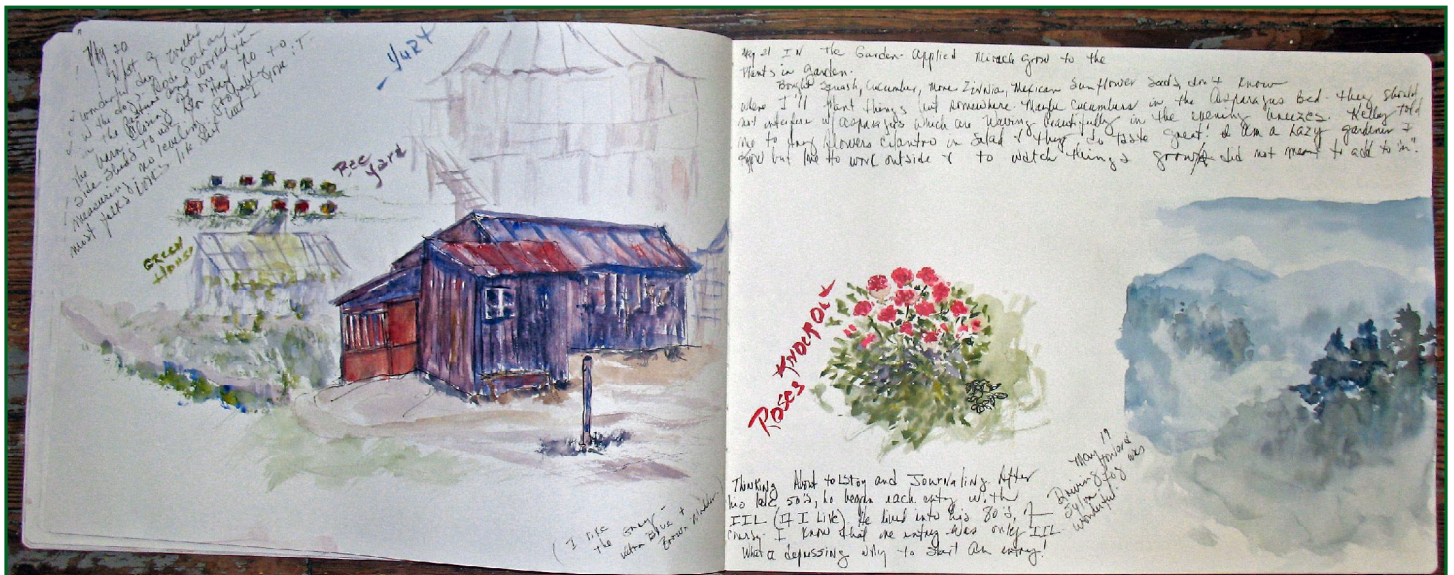
Elizabeth quite naturally prefers to record experience with sketches and watercolor washes. Most of her writing consists of notes in the margins of her pictorial renderings. She has a little folding Cotman watercolor kit not much bigger than a wallet that's surprisingly effective.

When we teach natural history classes, we find that many people are interested in the techniques we've devised for maintaining "nature journals." Everyone wants to retain and savor life's experiences, especially those encountered in the natural world. The best advice we have to offer is "Make an entry every day and keep it simple."

Contact info: <www.georgeellison.com> or <www.elizabethellisonwatercolors.com>.

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ANNOUNCEMENTS: 2014 Annual Meeting

Registration and Call for Papers

The Annual Meeting of the Southern Appalachian Botanical Society will take place in conjunction with the Association of Southeastern Biologists, in Spartanburg, South Carolina, April 2-5, 2014. For meeting information or to submit an abstract, go to <http://www.sebiologists.org/meetings.html>.

SABS Student Awards

The Southern Appalachian Botanical Society is pleased to announce two awards for students: the SABS Outstanding Student Poster Award and the SABS Outstanding Student Contributed Paper Award. These will be presented at the Association of Southeastern Biologists meeting in Spartanburg, SC, April 2–5, 2014. SABS convenes as one of the affiliate organizations at this meeting. The posters and talks will be assessed by anonymous judges. The awards include \$500 honoraria, and the winners will be announced at the ASB banquet.

Qualifications: A nominee must be a current undergraduate or graduate student in good standing and must be a current member of SABS. A student will self-nominate his/her poster or oral presentation when registering for the ASB meeting and submitting the abstract. The instructions for nomination are on the ASB Website.

The presented paper (oral presentation) will be judged based on:

- written communication (abstract)
- oral communication (presentation)
- technical approach (fieldwork, lab techniques, and statistical analyses)
- significance of research
- knowledge of subject (response to audience questions)

Posters will be judged based on:

- written communication (abstract)
- organization of information and graphics on poster
- oral communication – interaction with visitors, response to questions
- technical approach (fieldwork, lab techniques, and statistical analyses)
- significance of research